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ORIGINAL ARTICLES.

TUBERCULOSIS CUTIS VERRUCOSA.

Read in the Section on Dermatology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

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The discovery of the tubercle bacillus by Koch and the incontestable proof furnished by experimental inoculation that it was the cause of pulmonary tuberculosis, has acted as a powerful incentive to the study of disease from a bacteriological standpoint of view, and, leading to the study anew of many affections hitherto considered as of unknown origin or doubtful nature, has allowed many of them to be established upon a firm basis. One of the most important results of this method of study has been the discovery that affections, previously considered separate and distinct one from the other, were in reality only clinical manifestations of the same disease; that is, they were due to the same cause—a fact which was most brilliantly seen in tuberculosis as it occurs in the skin. In this organ of the body, the most varying clinical phenomena have been found to be dependent upon the presence of a bacillus, morphologically and in its effects identical with that one found in tuberculosis of the pulmonary or abdominal viscera, or of the bones, etc., and the constancy of its presence has not only identified these cutaneous processes with tuberculosis in general, but has also served to demonstrate the bond which unites them one to the other.

The forms in which tubercular disease of the skin manifests itself are clinically so different, that we may be allowed to review them briefly. Among them should be mentioned those ulcerations which occur in the latter months of general tuberculosis, and which are situated most usually in the neighborhood of the orifices clothed with mucous membrane. The rarest of the forms of tuberculosis cutis, they originate primarily as a red, dry and hard papule, which undergoes caseous or purulent degeneration, softens and, breaking down or being scratched, becomes an ulcer. It may also develop secondarily through inoculation of a small cut or scratch, or slight wound. In either case, the ulcer, once formed, runs a very slow chronic course and never heals spontaneously.

Lupus in all its forms has also come to be accepted as clinical manifestations of tuberculosis cutis, since Demme[1] first demonstrated the presence of the tubercle bacillus in connection with it. Notwithstanding that, in its symptoms, it is so entirely different from the first mentioned form of this disease of the skin, and also from those to follow, still it corresponds with them pathologically. Besides, there can also be brought forward, in support of the tubercular nature of lupus, the repeated production of tuberculosis by experimental inoculation of a culture of the bacillus obtained from the affected tissues; the large percentage of deaths from tuberculosis of other organs occurring among those afflicted with lupus (Block,[2] 79 per cent.; Sachs,[3] 62.83 per cent.; Bender,[4] 62.3 per cent.); the frequent development of acute miliary tuberculosis after operative procedures made upon lupus, etc.

The large majority of those cases and of those cutaneous processes situated especially about the neck, which the older dermatologists called scrofula, scrofulous abscesses, serpigenous scrofulides, have also to be ascribed to the same cause as lupus. This form of tuberculosis occurs most usually in children and youths secondarily to tuberculosis of the lymphatic glands or of the bones or joints. When primary, it develops in the subcutaneous connective tissue and represents the so-called cold abscess or the gomme tuberculeux, formerly the gomme scrophuleux, of the French. All of these forms have been often enough demonstrated to be of tubercular nature by many successful inoculations, etc.

Separated from these in the manner in which they are acquired, but still belonging to the same disease and due to the same cause, are those clinical manifestations which can be traced more or less directly to infection from without, and which may be regarded as true "inoculation tuberculosis." In this category many of the so-called anatomical tubercles or verrucæ necrogenicæ are to be placed.[5 6 7] They occur most commonly upon the

[1] Demme. Berlin Klin. Wochschft., 1883.
[2] Black. Viertchft. f. Dermat. ü Syph., 1886.
[3] Sachs. Ibid.
[4] Bender. Deutsch. Med. Wochschft., 1886.
[5] Riehl. Centrblt. f. Chirurgie, 1885.
[6] Kareg. Ibid. [7] Finger. Deutsch. Med. Wochschft., 1888.

hands and fingers of those who have to do with autopsies, anatomical material, etc., appearing as a small red papule, which quickly becomes pustular and then covered with a crust. In the course of a few weeks, if the crust be removed, the lesion is found to have become warty, and between the papillary prolongations small drops of pus may ooze out on pressure. Their growth is slow and they undergo involution in their central portions while enlarging peripherally. The lesions may disappear spontaneously or they may be followed by general tuberculosis.

Closely allied to the just described lesion and differing from it only in minor points is that form of inoculation tuberculosis first described by Riehl and Paltauf,[8] and to which they gave the name of tuberculosis cutis verrucosa. It is the one which interests us more especially in this paper, since the case to which I would call attention can most properly be regarded as corresponding to those described by them.

According to Riehl and Paltauf, tuberculosis cutis verrucosa occurs usually in healthy adults, who by occupation are continually in contact with domestic animals and animal products—as butchers, cooks, etc. It is observed most frequently on the dorsum of one or both hands, or of the fingers, or in the interdigital spaces, but seldom on the palmar surfaces or on the wrists. The lesion resembles somewhat a group of irritated warts or a lupus verrucosus, and varies in size from a pea to a silver dollar. They are round or oval, but may coalesce together and then have a serpigenous appearance. Each plaque is surrounded by a narrow erythematous zone, on which there may be small superficial pustules or crusts. The central portions are elevated and warty, and pressure causes the appearance of drops of pus, which well up from between the papillary outgrowths. Involution of the plaques takes place spontaneously, but it may be months or even years before it begins.

Microscopically it was found, that the appendages of the skin were unimplicated in the process, but that the morbid changes, which were those belonging to tuberculosis in general, were situated in the papillæ and in the upper portion of the cutis. Tubercle bacilli were quite abundant. The pus was found to proceed from subepidermal miliary abscesses, which did not contain any tubercle bacilli, but staphylococci.

The following case, which has been under my care, seems to me to agree so accurately with the description of tuberculosis cutis verrucosa, that I would record it as an example of that form of disease, due to the inoculation of the tubercle bacillus, notwithstanding that the source from which that bacillus was derived was not the same as was observed in the cases reported by Riehl and Paltauf.

[8] Riehl and Paltauf. Viertschft. f. Dermat. ũ. Syph., 1886.

M. F., a female, aged 70, a native of Ireland, presented herself at my clinic at the Demilt Dispensary on March 20, 1888. She is a widow, in good general health and looks younger than she really is. She has never had any disease of the skin before. Her husband died some years ago from phthisis and since his death three of her children have succumbed to the same disease. A fourth child, a young man, had an attack of pneumonia two years ago, which was followed by phthisis, for which he has been under treatment at the Dispensary. When examined, it was found that there was infiltration of the apex of right lung and formation of cavity. During his illness, and also subsequently, his mother had nursed him and washed his linen and the utensils used by him. She states that she first noticed one year ago the inception of the affection on her hands. It began as a small papule on the knuckle of the little finger, and one developed also on the first phalanx of the index finger of the left hand. The papule was round, somewhat elevated, elastic, pale-red in color and slightly squamous. These lesions grew larger and became warty in appearance, new plaques appeared on the dorsum of the hand and enlarging, coalesced together forming a large diffuse patch. The disease began about six months ago on the right hand. The papules appeared first on the knuckle of the little finger and shortly after on the wrist. Its extension took place in the same manner as it had on the left hand.

On examination, it was found that the primary lesion on the knuckle of the little finger was as large as a twenty-five cent piece and that involution had begun in the centre. There was still a slightly warty appearance there, but it had sunk in to a considerable extent. The more peripheral portions were, however, more prominent, warty, and typical. There was a marked increase in the horny epidermis covering the majority of the lesion, which was pale red in color and bounded by a narrow red halo. Pus, however, did not well up on pressure. Along the ulnar border of the hand, a number of separate discrete lesions the size of a pea were found. They were unquestionably of recent origin and they showed to a marked degree the warty and other characteristics given by Riehl and Paltauf, with the exception that there was an absence of pus. The plaques on the dorsum of the hand, which had become confluent, occupied a considerable space. They now formed a diffuse patch, which beginning about a half inch above the knuckles, extended to the uppper border of the carpus, while laterally it reached the ulnar border of the hand, on one side, and on the other was bounded by the metacarpal bone of the index finger. This large plaque was more or less surrounded by a narrow red halo, and its surface was papillomatous and even decidedly fungoid in places. Ulceration was nowhere to be

seen, but lateral pressure caused pus to well up from the base in many points. There were also numerous small crusts, but any great excess of horny epidermis was not noticed.

On the right hand there was found, on the first phalanx of the index finger, a large oval lesion, but the one on the knuckle of the little finger had disappeared, leaving a superficial cicatrix. A large diffuse plaque occupied the dorsum of the hand from about midway upwards to the wrist, around the ulnar side of which a number of small discrete lesions curved, forming a more or less serpiginous line. On the wrist a glistening white superficial cicatrix was seen, the site of the primary plaque, which had undergone complete involution. The general features of the lesions and plaques on the right hand were the same as were observed on the left. Here and there in the large diffuse patches on the backs of both hands there were found portions undergoing, or which had undergone involution. On these the papillomatous or warty character had disappeared to be replaced by cicatricial tissue. Nowhere on the red halo surrounding the patches were there any small pustules.

The patient stated that the lesions were at times inflamed and were then quite painful, but for the most part subjective sensations were absent, except a slight itching occasionally. It was, unfortunately, impossible to obtain one of the small primary lesions for microscopical examination, the woman objecting to any one of them being excised, therefore I was obliged to be contented with a small piece from the edge of the large patch on the left hand. This was hardened in absolute alcohol, mounted in celloidin and cut with the microtome. A portion of the sections were stained with borax-carmin, the remainder for tubercle bacilli. In the carmin sections granulation tissue, small tubercles, epitheloid cells, giant-cells, etc., such as characterize tuberculosis, were found. The general features did not correspond exactly to those detailed by Riehl and Paltauf, differing in the much greater prominence of the papillomatous growth, in the lesser amount of horny accumulation covering it, and in the diffuse infiltration of the tissue with small round cells. These differences can, however, be explained by the facts that the sections examined were not obtained from a young lesion, but from a patch which had been present for a long time, had been subjected to all kinds of treatment since its first appearance, and had been repeatedly inflamed. Consequently the want of exact correspondence did not invalidate the diagnosis of tuberculosis, one which was further proved by the examination of the sections stained for bacilli. In these tubercle bacilli were found, not, however, very abundantly, only one or two in each section. They were found lying high up in the papillæ and also in the upper portion of the cutis proper, but none in the rete. The presence of these bacilli thus established the nature of this patient's disease without question, although the diagnosis of tuberculosis cutis was not an impossible one when proper weight to the clinical history and symptoms was given and other cutaneous affections which might have resembled it were excluded. It would seem as though the source from which the disease was acquired was also clear. She attended to her son who had phthisis, washing the linen and utensils which had been used by him, and a perfectly just supposition is, that she was inoculated by tuberculous sputa, or matter containing tubercle bacilli. In women of her class there is not found that attention to the hands, either in regard to cleansing or avoidance of small cuts or scratches which might be desired, and the probability is that some of these latter furnished the point of ingress to the microörganisms.

The primary lesions, that is, the small discrete ones along the ulnar border of the left hand and elsewhere, agreed clinically in every way with the description given by Riehl and Paltauf, with the exception that there was absence of the miliary abscesses mentioned by them. They are not, however, of great consequence, being only the result of secondary infection, and at any rate they were present in the older plaques. The very marked papillomatous character of these latter situated on the dorsum of both hands, cannot be said to belong to the process directly, but its development should be ascribed to the repeated inflammatory attacks to which these patches were subjected.

At the beginning of this paper it will have been noticed that the statement was made, that the so-called anatomical tubercle was very closely allied to the tuberculosis cutis verrucosa of Riehl and Paltauf. There do not, in fact, seem to be any material reasons why a distinction should be made between them. They certainly agree in their causation, while in the life history, the symptoms characterizing the lesions and the anatomical changes found in each, there is a virtual agreement. The only difference between them seems to be in the source of the material causing them, but that is such a minor point that it would, unquestionably be better, and it would simplify nomenclature, if they were both included under the same name as representatives of inoculation tuberculosis of the skin; which, in fact, has lately been done by Finger.

The diagnosis of this inoculation tuberculosis may at times be difficult. Still if full value be given to the general history of the patient, the course of the individual lesions, and aid be obtained also from the microscope and from differential diagnosis, the obscurity which might surround a case may be easily cleared up.

Owing to its verrucous character, the disease certainly resembles several other cutaneous affec-

tions, among which may be mentioned lupus papillaris, which very frequently is found on the extremities and hands. This form of tubercular disease—that is, lupus—begins most frequently early in life and its primary lesions are small brownish tubercles deposited in the skin. After these small nodules have undergone degeneration, broken down, and an ulcer has formed, then from this as a base the papillary proliferation shoots up and the verrucous form of lupus is established. As has been mentioned, no ulceration ever occurs in the inoculation tuberculosis under consideration, the primary lesion arising from normal unbroken skin. Relapses likewise never take place in the cicatrices, as is the case in lupus.

The ordinary inflammatory papillomata are likewise easy of recognition from their localization, their acute course, the absence of cicatricial involution occurring spontaneously, and by the history and symptoms of the disease which preceded their development. The so-called frambœsia syphilitica differs also from the tuberculosis verrucosa cutis in that it always develops from an ulcer, which has the peculiar indurated base of specific lesions. It is surrounded by a sharply defined zone of infiltration, and either in the vicinity are some characteristic ulcerations, or here and there on the body there may be found evidences of previous or existing syphilis.

On the backs of the hands, the papillary form of epithelioma is not infrequently met with. It originates, however, from a preexisting wart or from an ulcer; its base is indurated and it undergoes ulcerative metamorphosis, all of which are absent in the form of tuberculosis under consideration.

It is scarcely necessary to continue further the question of differential diagnosis, since in any doubtful case recourse should be had to the microscope, which will readily solve the question; but a few words in regard to treatment are advisable.

All that there is to be said of this is comprised under the term mechanical. The small plaques should be excised in toto, while the larger ones may be scraped out with Volkman's sharp spoon or destroyed by means of a Paquelin cautery. Thorough and complete destruction of the disease is the important point, and the choice of remedies should always be made with a view to that end.

No. 45 E. 30th Street.

SCARLET FEVER prevails to such an extent in Holland, Mich., that the Board of Health has ordered the Sunday-schools to be discontinued.—*Chicago Evening Journal*

THE membership of the Association must be increased for the general welfare.

A CASE OF ATROPHY OF THE SUPERCILIA AND CILIA, ASSOCIATED WITH ATROPHY OF ALL THE FINGER-NAILS, OF CONGENITAL ORIGIN.

Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

BY R. TILLEY, M.D.,
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G. H., æt. 17, father and mother living, several other children. Patient came complaining of difficulty in using her eyes. There was a large amount of photophobia, considerable blepharitis and some conjunctivitis, the two eyes being about equally affected. There was no entropion, but the upper lids were considerably swollen and there were practically no cilia on the lower lids, about three or four, stunted in growth on each under lid. On the upper lids the cilia were more abundant, but still there were few in number and stunted in growth. The supercilia presented, however, the most striking features. They were so short and stubby on both sides, especially towards the temporal region, that I could not be persuaded that she had not burned them either intentionally or accidentally. Whilst I was examining her, the Sister Superior of the institution came in the room and at once observing the supercilia exclaimed, "What made you burn your eyebrows?" To which the girl protested smiling, that she had not done so; that they had always been in that condition.

The hair of the scalp was abundant and black. On examining the finger nails I found a marked condition or what might be called distrophy of all the nails of both hands. There was not one exception. She assured me that her father's nails are exactly the same as hers, on both hands, and that his eyebrows are similar to hers. I have not had an opporturity of seeing her father to verify her statement in this regard; on further inquiry she told me that she had two brothers similarly affected. I visited her home and found a little brother about two years old. All his nails were as nearly like the nails of my patient as it was possible for the nails of a child of two years to be like one of seventeen years. The cilia and supercilia were also exactly similar to those of his sister. On the lower lid there were three or four cilia, and those stunted in growth, and the supercilia had the same burnt-off appearance, only the phenomenon was not so striking as the little one had light hair and light supercilia, whilst my patient had dark hair and dark supercilia.

I have examined the cilia and supercilia under the microscope and have brought a slide with me so that those who wish to examine them may have the opportunity. There is a marked deficiency in the epithelium of the hair both in the shaft and the root. Both show a marked distrophic condition. It would seem as though the

burnt-off appearance was occasioned by the breaking of the shaft. One of the supercilia on the slide shows a place where it was ready to break before it was taken out The pigment present is abundant. The great majority of the individual hairs was not more than an eighth of an inch long—root and all.

The nails, as I have said, on every finger of both hands, exhibited a phenomenon which I have tried to demonstrate to you by a cast. It was taken from the thumb. All the other fingers correspond to the thumb so closely that I did not think it necessary to take another cast. It would simply have been a repetition as nearly as a finger can resemble a thumb.

The nails are not discolored in any way; they have not lost their luster, but they are so thin that they give practically no support to the tip of the finger, and each nail on its anterior half, presents one, two or three little depressions, according to the size of the nail. There is not among the whole fingers a single nail that exhibits any projection at the free border. The nails on the toes are similar, only they are more distorted and are little shapeless masses of distorted epithelia. The little brother's toe nails were not quite as much deformed as those of my patients. He was running around without shoes or stockings on.

The mother sustained the testimony of my patient that her father's nails, eyelashes and eyebrows were exactly similar in appearance to those of my patient, and considering that I have seen the same manifestations according to her statement in the little brother, I think, without unwise credence, we may accept the other cases of father and older brother on testimony. We have then for consideration a father and three children all exhibiting marked similar peculiarities in the nails, cilia and supercilia.

What shall I say relative to the etiology of this peculiarity? Kaposi and other writers on dermatology say that when the nails are disfigured by atrophy or distrophy the hair frequently exhibits similar conditions. I find no special mention made of the cilia and supercilia.

Evidently in their estimation syphilis is responsible for a large share of the deformity which occurs in the nails, and to me the peculiarity of the fingers in question are more satisfactorily explained by a supposition of a syphilitic inheritance. But if that is the case in the nails has the same cause been at work in the distortion of the cilia and supercilia? I carefully sought, but was unable to find, any enlarged glands; there were no characteristic teeth, no deformity of the bones, nor any indefinite cachexia. The only suspicious circumstance that showed itself the last time I saw the patient was an abscess on the arm which, supposing there had been a history of syphilis either congenital or acquired, might well have passed for one of its products. But of course acquired syphilis is ruled out.

I will merely add, the acute affection for which the patient was brought to me rapidly subsided, but that I did not attempt any medication or treatment to restore the cilia or supercilia.

A CONTRIBUTION TO THE STUDY OF TUMORS.

Being part of the Discussion on Tumors at the recent meeting of the New York State Medical Association.

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What constitutes malignity histologically and clinically?

From earliest times tumors were grouped into two classes, the benign and malignant. Long before exact methods of observation permitted closer discrimination, the physician recognized these two groups. From the patient's standpoint, the most important question is whether the tumor is or is not innocent in character. To the surgeon, too, this division of neoplasmata, based as it were upon prognostic considerations is all important. It establishes the time for and the character of any operative interference. It continues the patient under observation for a period of years, or leads to his dismissal after operation. And, therefore, it is proper, though perhaps very unscientific, to view tumors in this light.

What is understood by the malignity of a neoplasm? If we are to consider it synonymous with danger to life, tumors in themselves innocent, would by location become malignant. This is obviously not what is meant. It refers to a growth which invades, not merely displaces tissues in its immediate neighborhood, which excites in them such radical changes that their former identity is lost; a growth of infectious character, which disseminates its infection through vascular and lymphatic channels, heaping up its infectious elements in the glands and organs of the body. The malignity of a tumor excludes its being serious simply because of its local disturbances, but ranks it as one capable of producing not only local destruction of tissue but of extending its destructive tendencies to various organs and thus imperilling life. Not all malignant tumors possess this power to an equal extent, nor do all tumors, histologically identical, exhibit the same degree of malignity. Moreover, in others the border line between benignity and malignity cannot be well drawn. The manner of growth of malignant neoplasmata is extremely suggestive of their germ origin. In these days of bacteriological investigation, it is not remarkable that much attention has been devoted to the search for some microbe, the presence of which might definitely establish the malignant character of a tumor.

In November of last year, at a special meeting of the Society for Internal Medicine of Berlin, Dr. Scheuerlen, clinical assistant of Professor Leyden, presented a paper upon the "Etiology of Cancer." It was based upon a study of ten cases of carcinoma of the mamma, five of the uterus, five of the cervix, three cases of metastatic cancer of the liver, and one of the stomach. He asserted that cultures made from spores found in each of these tumors, lead to the development, each time of the same bacillus.

Franke reports in *Muenchener Medizinische Wochenschrift*, No. 4 of the current year, that he has discovered in sarcoma, bacilli and spores which are constant. The bacilli are thinner and longer, the spores somewhat thicker and larger than those of the carcinoma. Schill, of Dresden, who since 1882 has searched for a micro-organism to which he could attribute the origin of cancer, claims that he constantly found in cancer juice and sections of carcinomatous tissue rod formations, but never really bacilli. Petit (*L'Union Medicale*, No. 152, of last year) claims for Rappin the glory of having been the first to discover the Scheuerlen bacillus, with which he has awakened, by inoculation, a cancerous disease in a rabbit, finding here, again, the same microbe.

And yet good observers who have studied the validity of these claims, among them Senger in particular, insists that Scheuerlen has mistaken for the spore of cancer what is nothing more than that of a potato bacillus. Senger maintains that if it is really the bacillus of cancer, it ought to be evident in cancerous tissues as a bacillus. But here only spores have been found, while the bacillary growth is most luxuriant where the potato is used as soil. Moreover, in upwards of 350 inoculations, the results have been negative. So while the theory of infection through the agency of a microbe might very beautifully explain the progress of malignant tumors, we can merely say that we have reached a new stage in this study, but are not as yet able to demonstrate microscopically any pathognomonic germ.

And yet the microscope has been the means of unfolding to us an explanation of these malignant attributes. In most instances it is possible to determine histologically, the character of a tumor. Luecke, excluding cysts, recognizes in solid tumors, the only real neoplasmata. For the present discussion, this broad division will answer our purpose. But it must not be forgotten that many apparently innocent blood cysts are really hæmorrhagic sarcomata, their walls presenting the characteristic microscopic appearances. Speaking generally, it may be said that those solid tumors which exhibit microscopically, maturely organized tissue formation, are innocent, while those whose counterpart cannot be found in the mature body, but which present a rich but immatured cell structure, are malignant growths. Sarcoma and carcinoma exhibit no typical matured tissue in their construction. Sarcoma is a connective tissue tumor, with its component cells in their embryonic state. For many years one form of cancer bore the name of epithelioma, as it was apparently of epithelial lineage.

In 1871 Waldeyer, in an able résumé of his own as well as the labors of other German coworkers, published in Volkmann's Sammlung an address, which took the advanced stand that all forms of cancerous disease were of epithelial origin. In studying the development of these two forms of malignant disease, it becomes apparent that they do not imitate in their growth the typical connective and epithelial tissues, but that sarcoma becomes the atypical unrestricted connective tissue tumor, and carcinoma the atypical unrestricted epithelial tumor. More than this the kind of epithelium present at the site from which the tumor grows, indicates the kind of carcinoma we are to encounter. Squamous, spheroidal and cylindrical epithelia develop in turn, not only primary carcinomata of their distinctive types but maintain their individuality, even in secondary formations. The same independence for round and spindle cells is claimed by Ackerman, in his very learned discourse upon the histogenesis of sarcoma. These two kinds of malignant tumors maintain their respective types throughout the whole life period of their growth. There is no conversion of cells of one tissue to those of another, no growth of primary cancer from connective tissue. This statement is not to be understood as opposing, but rather of explaining the conversion of mature epithelial or connective tissue tumors into the malignant ones of their kind. The bloodvessels form the center of growth of the sarcoma. About them the spindle cells are seen to form and indeed are seen to grow out of their adventitia. The bloodvessels increase in number and size and soon countless nucleated spindle cells, sometimes large and again small, are seen isolated or gathered into bundles. If the formation has been rapid, no time for fibrillation occurs, and we have a tumor which may attain great size, rich in vessels and of soft consistence. Here the vessels may be seen converted into or built up of spindle shaped sarcoma cells, and the blood current may course through a series of sarcomatous canals. With slower growth we recognize macroscopically a distinct fibrillar arrangement, and the tumor microscopically is seen to possess a firmer structure. The particular arrangement of this new connective tissue will vary with the location of the growth, not only because of the peculiarities imparted to it by location, but also of the rapidity of growth its situation may excite. As the tumor grows by addition to its surface, the parts nearest its circumference, present the most recent tissue formations.

We have another variety of connective tissue

tumor, the very counterpart of new granulation tissue, the round celled sarcoma. Here we find in addition to the connective tissue stroma just mentioned, a large number of round cells, some corresponding to leucocytes in appearance and action, others, like mucous corpuscles or certain glandular cells. They are densely crowded between the meshes of the stroma. We encounter round cells of varying size called small and large and which Ackermann, because of their capability of taking on different stains, believes to be different kinds of connective tissue cells.

The stroma of sarcoma may assume most atypical and polymorphous shapes. It may not only be spindle shaped and fibrillar, but may be stellate, pyramidal and extremely irregular, or may at times resemble strongly the spacing met in carcinoma, when it is termed alveolar sarcoma. It is thought by Ziegler that the conversion of a network of vessels into a sarcomatous tissue leads to this alveolar formation. Scattered amongst the spindle and polymorphous stroma we sometimes find large multinuclear cells, known as giant cells. They are particularly encountered like their counterpart in the embryo, in bony structures.

Embryonic connective tissue is rich in mucin. This is particularly true of that which is ultimately to be converted into adipose tissue. We find the counterpart of this formation in the tumor called myxoma. Its usual seat is as we would anticipate, in parts where fat abounds normally. The close resemblance to, and frequent association of this tumor with the sarcoma renders it not altogether improbable that with time they may be grouped together. Stellate and fusiform cells are found as in sarcoma, and the difference between the two tumors is rather more chemical and physiological than histological.

It is not my intention to enter into a consideration of all the various forms of sarcoma due to location. They possess no important peculiarities save those imparted them because of their origin from specific matured connective tissues. Mention, however, should be made of the pigmented variety known as melano-sarcoma, with whose very malignant tendencies we are all acquainted. In its cells as well as its intercellular substance we find abnormally developed the normal pigment of the part. It is the cell element of the growth which indicates the character of the sarcoma, and it may be said that sarcoma asserts its greatest malignity when its cells approach most nearly the type of the youngest embryological connective tissue. And so the small round celled sarcoma is most greatly dreaded, next those spindle celled forms, where there is no marked fibrillation, while those which approach the higher and more organized types of tissue, exhibit less malignant tendencies. This disposition to attain in certain parts of a tumor the type of mature connective tissue is frequently manifested by its organization into bone, cartilage and so on. For this reason it is essential that all parts of a tumor and especially its youngest parts be subjected to histological study, in determining its malignancy. The outlines of some sarcomata can be well drawn; it is particularly the small spindle celled variety which appears to the naked eye to be encapulsed. Guided only by the microscopic appearances, the surgeon would be apt, because of this thorough definition to pronounce the growth innocent in character, but the microscope shows that the cells utterly disregard such lines of limitation and reach well into the surrounding structures.

Quite as certainly as sarcoma is the embryonic connective tissue tumor is carcinoma of epithelial origin. The time has come when we can regard cancer as being of local origin. Primary cancers occur only where in the mature body, some form of epithelium exists. To appreciate the character of a cancerous tumor is to study the manner of its growth. When epithelial cells multiply upon the surface of a given part, and become organized into tumor formation, the growth remains innocent in character. The moment these epithelial cells begin to invade the underlying tissues malignancy has begun. Pursuing their course with the microscope, they are seen to enter the connective tissue traveling along any microscopic channel, lymph canal or bloodvessel, and soon collect at various points in little groups called cancer bodies, building for themselves nests in the connective tissue called alveoli. Virchow considered this alveolar arrangement of the connective tissue the essential histological characteristic of cancer and presumed that cancer bodies which filled the alveoli were the outgrowth of connective tissue cells. His views had been generally accepted until Thiersch, Waldeyer, Luecke and others proved that they were but a result of epithelial cell invasion. Chains of epithelial cells can in some specimens be seen tunneling through connective tissue and effecting in it decidedly radical changes. The entrance of epithelial cells into connective tissue territory, awakens the infiltration of this tissue with numerous round cells, resembling lencocytes in appearance. These young connective tissue cells, also decidedly impress the infiltrated tissue and lead to further structural changes. The relation of vessels and cells to each other, is not as intimate as that seen in the sarcoma, for here they do not run between the cells but in the alveolar structure. Epithelia are of low vital power. In normal tissues they receive their nutrition not by direct vascular supply but by absorption; so here in epithelial tumors we find them thriving in the same way, and like low forms of animal life, multiply most rapidly.

The cells partake of the character of the epithelium of the affected part. Where the tumor is

of glandular origin, as in the breast, they are spheroidal; where normally pavement epithelium is found, as upon the skin and most mucous membranes, they are of the squamous variety; and where we would be apt to encounter columnar epithelium, they are cylindrical. They resemble the various forms of epithelium in shape and nucleation; they multiply in the same manner, but in their distribution and arrangement they disregard all laws of normal growth and go as they please. This atypical arrangement is an essential feature of malignity. The cells are absolutely unrestricted in their movements and infiltrate all kinds of tissue. The more numerous the cells and the less abundant the connective tissue, the more malignant is the growth.

The character of the stroma depends upon the tissue invaded. As it is present in large or small amount the tumor is hard or soft. The alveoli do not always appear as separate cavities, but in the best specimens Waldeyer compares them to the openings in and channels through a sponge; and as by compression the sponge can be freed of water, so also can the alveoli be emptied. The cells may be so numerous as to render the existence of alveoli not apparent; but the characteristic epithelial cell is never absent.

In considering tumors only from the standpoint of malignancy, the resemblance of sarcoma and carcinoma may not be a matter of moment. However, it will be in place to say that while in every form of cancer we have connective tissue invasion and change it is only the alveolar forms which particularly resemble each other. In carcinoma, however, the cancer cells and the alveoli are distinctly separate; in the sarcoma we see nests of cells sending out branches communicating with each other and with the alveolar walls, demonstrating by this connection their homogenesis.

Contrasted with benign tumors like adenoma, fibroma, myoma and other forms of organized cell growth, we recognize as the characteristic histological evidence of malignity the presence in great abundance of immature cellular elements, arranged in most atypical forms. Whether a microbe yet undiscovered awakens, through chemical or other agencies this cell activity, and disarranges the equilibrium of normal tissue growth is still unknown.

In the clinical study of a tumor, we are concerned first with its history. Sarcoma, occurring when connective tissue growth is most active, is recognized as the malignant tumor of childhood and early life. When the vitality of connective tissue is reduced, the resistance to the invasion of epithelial tumors is lessened. For this reason carcinomata are encountered later in life. Growing from fixed tissues, each form of primary malignant disease is found in certain structures and even in definite locations, Primary malignant disease of bone, is sure to be sarcomatous; carcinoma of bone results either from direct invasion from diseased epithelial structure or from secondary infection. Therefore, should we find no external evidence of invasion, the search for a more remote source of infection must be continued. We encounter malignant tumors at points where two kinds of epithelia meet, at constricted parts of canals and in places particularly prone to irritation. All of these facts correspond with the theory of development, made evident by histological study. Everything speaks for the local origin of malignant tumors. Were they of constitutional origin we should expect them to crop out simultaneously from different parts of the body. On the contrary, tumors which are primarily multiple are innocent.

Heredity is no longer to be considered an important factor. Congenital tumors are not malignant. Sebaceous cysts and nasal polypi follow up certain families more frequently than does cancer. Osteomata appearing in various members of one family are more sure to be located alike, than are malignant tumors.

Among the earliest local manifestations of a malignant neoplasm are those due to the infection of the surrounding parts. The resulting infiltration is characterized by an agglutination of the tissues, the mucous surfaces, for example cannot be freely moved upon the submucous tissues. There occurs fixation of the growth and restricted mobility of it. A malignant tumor of the breast, because of the penetrating infiltration, becomes adherent to the underlying muscular structures. It is the relation the tumor bears to its surrounding tissues which particularly exhibits its malignancy, clinically. The innocent tumor simply occupies a place in the tissues; it may, as a result of an inflammatory process, become somewhat adherent to the parts around it; it may, by pressure, produce atrophy of the muscles or absorption of bone. It acts only as a foreign body and possesses no power of infiltrating the tissues, in the midst of which it is placed.

Malignancy is further evident in the infection of neighboring lymphatic glands. While this tendency is largely possessed by the carcinomata, it is also manifested by some sarcomata. In a case, reported last year by Fischer, of malignant sarcoma of the penis (*Zeitschrift für Chirurgie*, page 313), the inguinal glands on each side were converted into sarcomatous tissue. With sarcoma of the testes, frequently pelvic lymphatic glands show sarcomatous degeneration. Whether sarcoma cells, because of their size and shape manage to pass through the lymphatics unarrested, or whether the lymphatics are not always invaded by the sarcoma cells, is yet a mooted question. But as in its origin sarcoma is so closely related to the vascular system, its dissemination is, as we would naturally expect, through the blood current, and with it we have earlier, than in carcin-

oma, the indications of more remote infection. Yet it is not always that only neighboring glands are involved. Virchow was the first to tell us that with gastric cancer the lymphatic glands above the left clavicle were frequently affected, and Belin has shown that every form of visceral cancer can exhibit glandular disease at some remote point.

In both sarcoma and carcinoma we have sooner or later organic infection, the result of the deposition of malignant emboli, carried through the blood current. These find their way to the lungs, liver, bones and other parts, and thus we have aroused a series of secondary malignant growths, whose presence we establish clinically.

In form malignant tumors present nothing characteristic. They adapt themselves to the shape of the affected part, sarcoma seeming often to be only an hypertrophy. Ordinarily they exhibit a broad infiltrated base; yet pedunculated growths may be sarcomatous in character. The vessels of sarcoma occasionally dilate to such an extent that the tumor appears like an innocent cavernous growth. One of this kind, I removed three years ago from a lady's arm. Histological examination showed it to be a melanotic sarcoma. It has as yet not recurred. With carcinoma we frequently find upon the surface isolated nodules, early adhering to the skin. They break down and the ulcer resulting is surrounded with discolored infiltrated tissues.

In the examination of malignant tumors, Luecke calls attention to the fact that not all transparent tumors contain fluid. Sarcomata and myxomata are often quite diaphanous. This property is shared by some lipomata and lymphomata. To the touch malignant tumors exhibit a varying consistence. Some are extremely soft, others very firm. Many primary carcinomata exhibit an elastic hardness, while the soft sarcomata, myxomata and softened carcinomata present elastic softness. This elasticity is often mistaken for fluctuation. The exploring needle or hypodermic syringe soon clears up the deception. Pulsation is apparent sometimes in sarcomata of bone or even of soft tissues. As the latter are built up largely of a sponge-like structure and can be greatly reduced in size by compression, the pulsation may strongly suggest aneurism. But their location, origin and growth will usually render a diagnosis easy. When bone is the seat of a pulsating tumor, it may be considered malignant, as the medullary canal can not well be the site of a spontaneous aneurism.

Sarcomatous disease of long bones may so undermine their stability as to render them very fragile before tumor formation has sufficiently developed to attract the attention of the patient. In December of last year a young woman was brought to St. Joseph's Hospital in Syracuse. During the preceding August she had fallen out of a hammock, and in the following September she made a slight misstep and sustained a simple fracture of the thigh. At the time of accident no existing disease of the femur was suspected. Union did not take place; the rapidly increasing swelling of the thigh was supposed to be inflammatory, and was treated by fomentations. Upon her admission to the hospital the diagnosis of sarcoma was made. The disease made rapid progress; the tumor extended to the body. Secondary growths occurred in the lungs and upon the skin, and in March she finally succumbed after a most painful illness.

Another feature of malignant tumors is their recurrence after operation. In itself this is not indicative of malignity, for incompletely removed fatty and fibrous tumors will also recur. And yet the recurrence of sarcoma in the stump of the amputation, the recurrence of carcinoma in the cicatrix or neighboring lymphatic glands are to say the least very suggestive. The period of time elapsing after removal indicates whether the recurrence is due to the continuous growth of unremoved portions, or whether we are really dealing with a new tumor; while the parts affected by the new growth establish whether or not there was co-existing disease of glands or internal organs.

Tumors innocent in character and springing from specific tissues may be converted into malignant growths of their type. Thus the papilloma may become the squamous celled carcinoma. During the past year, the whole civilized world, and particularly the medical profession, were exercised over the malignant laryngeal disease of the late German Emperor. Stoerk published in the *Wiener Medizinische Wochenschrift*, Dec. 3, 1887, a most interesting paper bearing upon the diagnosis of papilloma and carcinoma of the larynx. As it nicely illustrates some of the distinguishing features of malignant tumors, I will ask you to bear with me while I present the results of his study.

In the larynx every affection of the epithelial surface, active or sluggish, leads to excessive epithelial growth, but none to such an extent as the papilloma. Aside from slight disturbances of phonation and laryngeal irritation, patients endure these papillary growths for an unlimited period without much inconvenience. A great quantity of catarrhal discharge is excited and the tumor is maintained in a succulent condition. Isolated papillomata may slough and be cast off, others undergo retrogressive changes. While innocent in character they are freely movable, produce no interference with the action of the laryngeal muscles, and maintain a pale yellowish-white color.

The moment the discharge lessens and the papilloma ceases to be succulent, the floor upon which it rests changes; single masses become conglomerate, nodules appear upon the surface, the tumor

is less movable, it becomes of firmer consistence and takes on a darker hue. This dark discoloration is a positive indication of its change in character. Ultimately the tumor is found to be immovable, as though it were riveted to the substratum. With the cessation of epithelial growth upwards it attains greater breadth at its base. The epithelial cells are found to have penetrated connective tissue, muscular fibres, and the very walls of the blood-vessels are crowded with epithelial cells. This general infiltration produces great interference with laryngeal functions; cellular infiltration progresses, new nodules appear and the carcinoma spreads. Disseminated papillomata exhibit least the tendency to carcinomatous conversion.

The microscopic examination of papillary masses coughed up or removed will not reveal the true character of the growth, for it is the examination of the base which is all-important. Endolaryngeal operations performed for this or other purposes have often rendered these growths unsuitable for extirpation. The mildest operative procedures often awaken cell activity and confer upon quiescent growths most malignant attributes. Painful deglutition, disturbed phonation, respiratory distress, take the place of a mild train of symptoms. The loss of muscular integrity, the resulting laryngeal immobility, are pathognomonic of the conversion of innocent into malignant tissue.

For these reasons, Stoerk believes that the diagnosis must be made with the laryngoscope, and that here, at least, clinical appearances are more to be depended upon than histological investigation.

What is the mechanism of the necrotic process which so often occurs in certain neoplasmata? Innocent tumors are not prone to necrotic changes except as a result of interference with their nutrition, or as overaction in them develops inflammatory disturbance. By pressure they may occasion death in the surrounding tissues or, resulting from their excessive growth, overlying tissues may become too tense and give way.

In malignant tumors, the outcome of atypical cell growth, there may occur cell metamorphoses and death. These tumors may additionally be subjected to accidents and diseases. Hæmorrhage into a sarcoma may be so extreme as to completely alter its character. Moreover, inflammation may arise and result in structural death.

It is in the carcinomata especially that we encounter the necrotic processes. As epithelial tumors depend for their nutrition upon the vessels of the connective tissue, the relation of the epithelial formation to the underlying structures is of vital importance. When, as a result of epithelial disturbance, the underlying connective tissue becomes densely packed with small granulation cells, thickening and development of the epithelial body is prevented and, cut off from its nutrient subsoil, cancerous ulceration occurs, which we call rodent ulcer.

When superficial structures become infiltrated with carcinomatous cells, and by tunneling through and into them, the nutrition of the part ultimately becomes affected, necrosis occurs. The resulting ulcer is not simply the result of tension and pressure, but actual cell infiltration, and its edges bear unmistakable evidence of it. The ulcer and tumor are so intimately associated, that the former simply fades into the latter. In the same way, epithelial cell invasion of the deeper parts cuts them off from their vascular supply. Central softening and degeneration results. The destructive process extending to the surface, leads to the formation of crater-shaped pockets. In the extension of carcinoma from skin to mucous membrane, the disease does not spread continuously, but the epithelial invasion reaches from the depth up towards the mucous surface and chokes the normal tissues into ulceration.

The protoplasm of the epithelial cells may undergo change. Fatty degeneration and caseation occur, particularly in the spheroidal, sometimes also in the squamous-celled carcinomata. This fatty metamorphosis may continue to such an extent as to fill some of the alveoli in carcinomatous breasts with a butyrine substance. Small losses of tissue thus result. The connective tissue cells also undergo similar degeneration. Extensive suppuration and sloughing may follow, and in this way, too, deep pockets and great loss of tissue is occasioned.

A form of degeneration, once supposed to be a variety of carcinomatous growth and not decay, is colloid degeneration. It is seen particularly in the carcinomata arising from columnar epithelium in the intestinal tract and the cervix uteri. Other varieties occasionally exhibit it. Its character varies with the parts involved. Unquestionably, however, it is the result of alteration in the protoplasm of the cancer cells.

Closely allied to this is the mucoid degeneration of the connective tissue cells. We have present in all connective tissue, as Kuehne showed, a certain amount of mucin. It is the muciparous serum which separates the sarcomatous connective tissue cells from each other. We encounter mucous transformation in sarcoma of the breast, testes and other parts. It leads to necrotic changes and cyst formation in some cases.

Inflammation, rarely terminating in suppuration, occurs in sarcoma. It may lead to cell activity and an abscess may be suspected. But skin infiltration gives way to skin destruction, and a fungous mass appears. Butlin reports a case where a sarcoma in this manner sloughed out of a boy's thigh.

In the stroma of old cancers, especially of the breast, a form of metamorphosis occurs by which the growth is said to wither. The process is

rather one of organization, a real fibrillation of the connective tissue. By means of this cicatricial contraction the growth is greatly reduced in size.

It is evident that, as cell activity manifests itself in the growth of malignant tumors, so we see cell life intimately associated with their decay and death.

Are malignant neoplasmata ever cured? If, in referring to malignant growths, we speak of effecting a cure, and mean thereby the internal administration of medicines which will aid a given part to resist the further invasion of the disease and to cast off the existing trouble, returning to its normal state, we surely must answer the question in the negative. No one speaks longer of malignant neoplasmata being the local expression of a constitutional taint. The disease begins in the very primitive cells of a part, and in its advance simulates most closely other infectious diseases of local origin. The question is, therefore, to be put in this manner: Can we ever so thoroughly eradicate a malignant tumor that in the future there shall be no recurrence of it locally, nor any remote manifestations attributable to its infection? This we certainly can answer affirmatively.

To say whether, in a given case, a favorable prognosis can be offered, requires a consideration of its period of existence, its seat, its anatomical and clinical characteristics, its extent, the local and constitutional complications, as well as the operative measures to be pursued. As the discussion of these important questions will fall to abler hands, it will only be necessary for me to briefly state a few established principles.

The greatest hope for the relief of malignant disease lies in its early thorough removal, while the disease is still very limited in extent, and before glandular infection is evident. As many cases have passed far beyond this stage before surgical attendance is solicited, the ultimate result is greatly imperiled. The primary location of a malignant tumor in an internal organ, where signs and symptoms of its existence are most obscure, or whenever its character cannot be well defined, as in the thyroid gland, early operation is out of the question.

A tumor which in a brief period of time has attained great size and exhibited unusually malignant tendencies, does not present as favorable an outlook for future exemption as does one whose growth has covered a long period, and where indications of local and general infection have long remained absent.

The occurrence of a primary growth in a part thoroughly accessible, and whose site forces its early recognition by the patient, leads to the most favorable results. Thus, in the lower lip 30 to 50 per cent. of the afflicted are cured. Appearing where with difficulty it can be entirely removed, its thorough eradication is all but impossible. Malignant tumors of the upper jaw present, therefore, but little to encourage an operation. When, furthermore, the removal of a malignant neoplasm demands an operation in itself dangerous, the probability of success is small.

In his recent work upon "The Operative Surgery of Malignant Disease," Butlin strongly denounces the very serious but so-called brilliant operations of recent times for the relief of malignant disease. He refers to statistics of extirpation of the larynx, removal of malignant tumors of the kidney, of the uterus through the abdominal wall, cancerous thyroids, and so on, 364 cases in all, of whom 238 died in consequence of the operation. "Battles, shipwrecks and railroad accidents," says he, "are mild and merciful compared with some of these achievements of modern surgery." But it is not my intention to enter upon a discussion of operative procedures.

Without extending my remarks further, it can be safely said that where, by an operation, a malignant neoplasm which has not awakened secondary infection can be thoroughly removed, we may hope for permanent relief. True, people may after years again become the victims of malignant disease, just as they may twice have pneumonia; but the two attacks need not be more closely related to each other. Great loss of tissue or sacrifice of limbs may be necessary, but the disease is wholly removed.

A REPORT OF TWO CASES OF SCALDING OF THE AIR PASSAGES BY THE ACCIDENTAL INHALATION OF STEAM, WITH REMARKS.

Read before the Medical Society of the District of Columbia, June 13, 1888.

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The following case fell under my observation in the Marine Hospital Ward of the Providence Hospital:

Captain Wharton, of the steam tug Clara Uhler, was brought to the hospital at 7:30 P.M., December 14, 1883. It appeared on inquiry of the Pilot who accompanied him, that about 6 o'clock in the morning, the tug was lying in her berth at Shamrock Wharf, lower Potomac, and the Captain was asleep in his cabin, the engineer attempting to get under way, a pipe blew out and threw with great force the steam and hot water through the bulkhead on to the Captain and scalded him about the body, face and limbs, and he inhaled much of the steam. As the tug was disabled, the patient was compelled to wait four hours on board before he could proceed up the river. He arrived at Alexandria at 5 P.M. where a physician was sent for. He gave him a

white powder, presumably morphia, and sent the patient hurriedly on to the hospital. On examining him, I found him in a state of collapse, his extremities were cold and pulseless, and his temperature was sub-normal. He was conscious but unable to speak, and his respiration was shallow and difficult. The *facies hippocratica* was well marked. I looked into his fauces and found the pharynx a white mass of scalded mucous membrane looking like a lining of cotton. Every effort was made to bring about reaction by the usual remedies, but the unfortunate man died in about two hours after admission to the hospital.

Case 2.—Inhalation of steam. Treatment by inhalation of dilute sulphuric ether; Recovery.—A male child, Geddis Crump, æt. 20 months, was playing in the kitchen of the house 22 D Street, N. W., on the evening of November 23, 1887, and while so playing applied the spout of a tea-kettle to its mouth and suddenly inhaled a full inspiration of the steam from the kettle. The child immediately began struggling for air and rapidly grew worse. Dr. G. H. Wagner was sent for, and on his arrival found the child in great distress, stridulous breathing and cyanotic hue, struggling violently for air. The inside of the mouth and pharynx looked as if it were lined with cotton. Fearing œdema of the glottis, Dr. Wagner sent for me in consultation, and on my arrival an examination convinced me that the entire track of the lining of the pharynx, larynx, and trachea seemed involved. There was, therefore, no indication for the performance of tracheotomy as operation at the usual site could not relieve the diminished calibre of the air passages below. I, therefore, recommended the inhalation of ether for the double purpose of relieving the pain and arresting the spasm, but as the ether must be continued for some hours a diluent was necessary, and I used listerine; it is probable that an alcoholic solution of oil of juniper and cajuput might have answered an equally useful purpose, but the listerine was handy and no substitute occurred to me. Dr. Wagner administered the mixture, (ether 1 part, listerine 3 parts) and the pain was arrested, and the breathing became tranquil. He continued to use it through the night whenever the breathing became difficult, and had the satisfaction of seeing the child much better the next morning, and the inhalation was continued at intervals until about 4 P.M. Wednesday. At 9 P.M. on that day, the stridulous breathing again began, and the inhalations were continued until about midnight, after which there was no recurrence of the difficulty. During this time the child was nourished by means of weak milk punch. Steady improvement began, and by the following Monday the child was entirely well.

A hurried glance at the literature of the subject shows that these cases are not numerous, although Mr. Gant[1] speaks of scalds of the larynx as frequent "among the children of the poor, in their attempting to drink from the spout of a kettle containing boiling water. The act of swallowing is not complete, but the inside of the mouth and pharynx are scalded, and œdema of the glottis is speedily induced; the interior of the larynx remaining unaffected."

A somewhat similar statement is made by Mr. Bryant,[2] who in writing of scalds of the larynx, says: "This somewhat common accident is doubtless engendered amongst the poor by the habit of feeding their children out of a teapot.[3] The child when thirsty and alone, being accustomed to drink from the spout, seeks it from the kettle, and so scalds the pharynx and orifice of the larynx, that œdematous inflammation of the part follows in the same way as a blister arises by the application of boiling water or steam to any other tissue. The symptoms caused by such an accident appear, as a rule, very speedily, the small chink of the glottis soon closes, and as a consequence, a fatal result ensues, unless early relief can be obtained. In some cases the mouth, with the soft palate, tongue, and fauces will be found swollen and vesicated. There will be difficulty in swallowing, and some alteration in the character of the voice. The respiration rapidly becomes affected, and a spasmodic croupy cough appears with stridulous breathing. These symptoms may be complicated with attacks of spasmodic dyspnœa, at long or short intervals; but when these attacks appear extreme danger is indicated, any spasm possibly proving fatal."

Mr. Eddowes[4] has reported a case of a severe scald of the mouth followed by œdema of the glottis. In this case tracheotomy was performed, but the child died on the fourth day after admission to the hospital. The post-mortem examination showed great venous congestion of the brain, and bubbles of air in the superficial veins of the membranes, some adhesions between the hemispheres, sero-purulent effusion between the dura arachnoid, and the lungs engorged with blood. The mucous surface of the trachea up to the larynx in a state of hyperæmia with appearance of purulent effusion. In the stomach there were two spots of sanguineous extravasation underneath mucous coat. The other organs were examined by Mr. Eddowes, but there is no note of any abnormality attributable to the injury.

A number of steamboat explosions have occurred in this country, in which scalded men have been admitted to the various Marine Hospitals, but it has only rarely happened that the mouth and larynx have been scalded in these accidents. It seems to depend upon the lo-

[1] Gant, Frederick James, (F.R.C.S.): The Science and Practice of Surgery, London, 1871.

[2] Bryant, Thomas (F.R.C.S.): The Practice of Surgery, London, 1872.

[3] This statement seems to have originated with Marshall Hall, *vide* Med. Chirurg. Trans., Vol. xii, London, 1822.

[4] London Lancet, 1879, Vol. ii, p. 122.

cation of the men's berths, and on a majority of vessels, the forecastle is a safe distance from the boilers. Not so, however, on steam tugs and the smaller varieties of steam water-craft where economic reasons govern the location of the sleeping spaces.

In the harbor of Toulon, in 1859, a steam pipe burst on the corvette "Le Roland," and a number of seamen were badly scalded, and in these cases there were some scalds of the mouth.

The treatment consisted of opiates internally, and the usual topical remedies. At the necropsies it was found that the tongue was denuded, red and bloody, and the muscular structure visible. The interior of the mouth and arches eroded, swelling of mucous membranes of air passages, and general congestion of the viscera.[5]

A somewhat similar condition is seen in the inhalation of hot smoke. Dr. Cohen[6] relates a case he saw with Dr. Keen, where there had been an inhalation of hot smoke during the conflagration of a burning building. In this case there was "œdema of the larynx threatening suffocation, copious and frequent inhalations of the spray from a solution of the watery extract of opium relieved the suffering, and the patient eventually recovered."

In twenty-eight cases of scalds of the mouth, pharynx and glottis collected by Mr. Durham, twenty-three were fatal. (Ashurst.)[7]

It must be evident on reflection that the lesions from the inhalations of steam, are more extensive, reaching further into the air passages than hot water or other fluids, and the same remark is applicable to those cases where in a burning building a flame is inhaled. In the case of caustic liquids or hot water the epiglottis, by falling down, protects the larynx, but this is rarely the case in the inhalation of steam, noxious gases, or flame.

As a medico-legal point, it is well to remember that severe internal congestions and reflex inflammations may supervene upon the injuries as well as upon those more extensive surface denudations. In short, says Taylor,[8] besides congestion there is generally abundant serous effusion in one of the great cavities, especially in the head." Rokitansky[9] has specially observed after burns of the skin of the abdomen, that they "were in a few instances attended by fatal hæmorrhage from the bowels."

In the post-mortem examination of cases of burns of the mouth, we should remember that after death the œdema is less marked than during life, and allowance must be made for that fact in deciding on the immediate cause of death, for a degree of swelling which involved danger to life, may, indeed, have almost entirely disappeared when the section is made.[10]

Treatment.—Let us now consider the important question of treatment in these cases. The indications are plain, to stop the pain and arrest the swelling. We cannot stop to assure ourselves that the burn is in one or another of the six degrees of Nèlaton,[11] and then after classification adopt the remedy appropriate to the degree. The swelling of the lining membrane may entirely occlude the upper air passages in a few hours. The remedy then to be useful must be speedy in its operation. Such a remedy we have in sulphuric ether. This, it will at once be seen, acts in the double capacity of a local and general anæsthetic.

The use of ether as a topical dressing of burns is not new. Dr. Nunn[12] refers to its use in recent burns on the surface of the body, superficial in character and limited in extent. He claimed that vesication was often prevented by commencing early, and steadily continuing its use until the pain ceased. Notwithstanding its irritating qualities, in case of the inability to procure ether, Dr. Nunn would use chloroform. The observation of Dr. Nunn in regard to burns on the surface of the body, is precisely in point, in the cases of scalds of the upper air passages, for the œdema follows the vesication, and if by the timely administration of the ether, vesication may be prevented, we have one of the most valuable therapeutic resources, and at the same time complete relief from the agonizing pain quite frequently the most prominent feature.

In my judgment, leeches to the outside of the throat, as recommended by certain text-books, will fail to exert any influence whatever in the arrest of œdema. Both Mr. Gant and Mr. Bryant speak of this means of treatment, but Mr. Gant, regards it as valueless, and in regard to tracheotomy he views it as "only an alternative between death and the possible preservation of life, and that the operation is generally fatal from the supervention of bronchitis or pneumonia."

Mr. Bryant, after referring to the mild cases which scarcely require treatment, speaks of a case of a child "in whom these symptoms were so slight that no anxiety was felt, but one spasm (laryngeal) took place two hours and a half after the accident which put an end to life." When the laryngeal spasms are present, Mr. Bryant early resorts to tracheotomy. In some cases of œdema after tracheotomy, he has found it advantageous to puncture the epiglottis, and the swollen laryngeal opening. An ordinary tenaculum he has found to answer every purpose, although several special instruments have been

[5] Gaz. Med. de Paris, 1859, 35, xiv, p. 26–30.
[6] Diseases of the Throat and Air Passages, N. Y., 1879, p. 99.
[7] The Principles and Practice of Surgery, Phila., 1871, p. 345.
[8] A Manual of Medical Jurisprudence, Phila., 1873, p. 377.
[9] A Manual of Pathological Anatomy, Philadelphia, 1855, Vol. 3, p. 74.
[10] Orth. A Compound of Diagnosis in Pathological Anatomy, N. Y., 1878.
[11] Nèlaton, élémens de Pathologie Chirurgicale, 1844, classified burns according to their severity, and phenomena: *a*. Local phenomena. 1st, 2d, 3d, 4th, 5th, and 6th degrees. *b*. General phenomena, etc.
[12] Charleston, M. J. & Rev., 1855, x, 640.

invented. The calomel treatment still finds advocates, and it is strongly probable that after the acute period has passed, calomel may be of great advantage.

For some inscrutable reason mercurial inunction is still retained in the treatise on this subject as a useful remedy in cases of scalds of the mouth and larynx. If one believes with a noted old surgeon that all diseases originate in the liver, and therefore prescribe ipecac and blue pill for every thing, there is some sort of consistency in the practice, but with different views of pathology there is no good reason for the practice, which should be dropped from the text-books. Sponges wrung out of hot water are useful as a means of allaying pain after the danger of œdema has disappeared,

Ether treatment is the most promising, and I believe it will be found the most successful. It certainly cannot be much worse than the tracheotomy by Mr. Durham, where twenty-three out of twenty-eight cases perished after the operation from either bronchitis or pneumonia, and the ease and comfort given the patient is itself worth a great deal. The amount of dilution in any given case will be governed by the urgency of the case, and the age and strength of the patient, and the duration of its administration will depend entirely upon the pain and the tendency to laryngeal spasm.

After witnessing its very happy effects in the case just detailed, I certainly would place it first among the therapeutical resources in such cases.

SPINAL CONCUSSION.

BY S. V. CLEVENGER, M.D.,

CONSULTING PHYSICIAN FOR NERVOUS AND MENTAL DISEASES TO THE MICHAEL REESE AND ALEXIAN HOSPITALS, CHICAGO; MEMBER OF THE AMERICAN MICROSCOPICAL, AMERICAN ELECTRICAL SOCIETIES, ETC.

In THE JOURNAL of Dec. 15, 1888, is published the Proceedings of the Chicago Medico-Legal Society of Oct. 6, 1888, beginning with a paper by Dr. James Burry, Surgeon to the C. S. F. & C. Railroad, who states that within five years $11,000,000 have been paid as damages by English railway companies in cases of alleged injury to the spinal cord, and $300,000 to the Chatsworth sufferers, among whom spinal injury cases preponderated. This may seem hard upon the railroad companies, but it would not be reasonable to suppose that the courts would have awarded such sums unjustly in all cases. Imagine the Jay Goulds of the world free to coin millions from the traveling public, unhedged by any fear of damage suits for carelessness, incompetence, or brutal disregard of human life.

Dr. Burry cites the case of Waterman *vs.* the Chicago & Alton R. R., wherein the defense was that the plaintiff had locomotor ataxia. Inasmuch as that disorder is spinal and may be caused by an injury, the verdict against the road may have been perfectly just. Parallel cases are cited by Spitzka, Gowers, Hoffman and Dana.

The case of Holland *vs.* the Chicago & Eastern Illinois R. R. to my certain knowledge was a genuine and typical case of spinal concussion, and the verdict of $30,000 awarded him was little enough for the complete demolition of his health and everything in life worth living for.

The Rozenzweig case *vs.* L. S. & M. S. R. R. was evidently exemplary.

Dr. Steele's statement that Dr. Phillips was restored to health, "except for a slight lameness," after securing $80,000 from the London & Southwestern R. R., implies that the verdict was excessive, which, in the absence of details as to the general mental and physical condition of Dr. Phillips amounts to nothing. "Health" to the casual observer may be restored, but usually in such cases the abilities required of a practicing physician would be lost. Erichsen's work is assailed as affording "overshadowing influence" and the erroneous pathological assumptions of that author are instanced against the general value of his book "Concussion of the Spine."

At the time Erichsen wrote, neurological pathology was undeveloped and so far as spinal concussion is concerned is still *sub judice*. It seemed justifiable to assume that organic lesions were behind the symptoms of the disease, inasmuch as extravasations and inflammatory changes in the cord produce allied neurotic conditions. If Erichsen went too far in guessing at the pathology of concussion he also states that "we should indeed be taking a limited view of the pathology of concussion of the spine if we were to refer all the symptoms, primary and remote, to inflammatory conditions, either of the vertebral column, the sheaths of the spinal nerves, the meninges of the cord or the substance of the medulla itself. Important and marked as may be the symptoms that are referable to such lesions as these that are *primarily dependent on molecular changes in the cord itself*, or spinal anæmia induced by the shock of the accident acting either directly on the cord itself, or indirectly, and at a later date, through the medium of the sympathetic, in consequence of which the blood distribution to the cord becomes disturbed and diminished."

The "molecular changes in the cord itself," which I have italicized above, constitute the cause of the symptoms at present assumed by pathologists, and Spitzka parallels it with the undemonstrable changes that devitalized the egg in railroad transit.

Surely it should not be claimed, when we do not know the pathology of a disease, that the disease itself does not exist, and yet in attacking the errors in pathology of Erichsen the clinical

symptoms of the disorder are ignored or denied. There is a similar inability to demonstrate the pathology of "spinal irritation," "neurasthenia," Landry's ascending paralysis, melancholia, and other grave disorders, but such inability does not abolish the ailments. Nor is anything proven by the fact that Erichsen has not revised later editions of his book, a common failing of authors for which there are many excuses.

Dr. Burry acknowledges that Page is equally faulty with Erichsen, a rather rare admission for a railroad surgeon to make. He claims that upon the "wholly imaginary pathological state, known as anæmia of the cord," is built up "a symptomatology equally vague and illusory," and then sweeps into this all the "mental, psychical and cerebral symptoms," and so on. *Is* the symptomatology of concussion built upon Erichsen's pathology? If we knew nothing of the pathology of pneumonia would its symptoms cease? There seems to be special pleading here.

Next comes the usual allusions to "corrupt practices, fraud, and defeating the ends of justice," as though claimants, almost always, and railway experts seldom, if ever, were corrupt.

In all the cases I have seen it would take a pretty good malingerer to pass the fire of medical inquisition the railroads are able to employ, aside from the *sometimes* bribed juries, of which we have notorious instances, in the corporation's behalf, and the *sometimes* very questionable practices of railway medical experts in ignoring evident symptoms, and even gross objective disorders, and avoiding anything like a scientific examination.

Dr. Lyman, in the discussion which followed, considered Page's book superior to Erichsen's. Page was a railway surgeon, and the very evident intent of his work was to counteract the effects of Erichsen in concussion cases. Dr. Lyman thought that many such alleged cases were cerebral or in other words hysterical. Erichsen characterizes hysteria as "a word which serves as a cloak to ignorance," something like our term malaria. But admitting that there is often an unhealthy emotional condition produced by spinal concussion, as part of the symptomatology, it does not make it any the less an undesirable consequence of the accident.

Westphal, Oppenheim, Rigler, Walton and Wharton Jones effectively disposed of this hysterical substitution for "railway spine," and as Dr. P. C. Knapp says: "Depression, anxiety, loss of memory, mental impairment, the tremor, the exaggerated reflexes, and the swaying with closed eyes, the pronounced paræsthesiæ, the vertigo and headaches (persistent headache being confessedly not a symptom of hysteria), nystagmus, vesical paresis, all these point to something besides hysteria." Drs. Wyllys Andrews and J. G. Kiernan answered many other points raised by the author of the paper.

The establishment of such a disease as spinal concussion does not rest upon Erichsen alone. The literature of the subject is accumulating and by excluding the frequent myelitis, meningitis, compression and other complications, the exact symptomatology is demonstrable, except perhaps to interested corporations.

Room 29, Central Music Hall, Chicago.

CASE OF BREECH PRESENTATION (SACRO-POSTERIOR):

UNSUCCESSFUL ATTEMPT TO DELIVER THE AFTER-COMING HEAD BY DEVENTER'S METHOD.

Read before the Medical Society of the District of Columbia, June 13, 1888.

BY HENRY D. FRY, M.D.,
OF WASHINGTON, D. C.

During the meeting of the Ninth International Medical Congress, held in Washington, in September, 1887, Dr. John Bartlett, of Chicago, presented a paper to the Obstetrical Section, entitled "A Study of Deventer's Method of Delivering the After-coming Head." The mechanism of this method was ingeniously demonstrated at the time by means of a manikin, and the impression conveyed to the members present was favorable as regards the feasibility of delivering the after-coming head by this means.

In the discussion which followed, Dr. Charles T. Parkes, of Chicago, reported three cases delivered successfully by Deventer's method after-failure of the usual modes of extraction, and Dr. G. W. Jones, of Danville, Ill., mentioned his success in a similar number of cases. In the absence of any single method of delivering the after coming head, that is any method that is so successful as to receive the unqualified endorsement of the profession, it seems to me that Deventer's idea commends itself to us as a valuable aid in special cases. Having been an interested listener to Dr. Bartlett's paper, I determined to employ the method at the first opportunity, and I beg to report to-night the result of that trial.

In the fall of 1887, I was consulted by Mrs. J., who was several months pregnant, regarding the advisability of removing a pessary which she had been wearing for the relief of retroversio uteri. I decided not to disturb the support, and it was allowed to remain in position until several months later, when the fundus had reached a point above the sacral promontory, and all danger of a recurrence of displacement had passed.

Mrs. J., was the mother of five children, and all of her labors had been rapid. Her health had been much impaired on account of the uterine displacement, but since the introduction of the pessary, two years ago, she had been greatly improved. A cough, which she had been told was from weak lungs, had disappeared, she had in-

creased in weight, could take moderate exercise without fatigue, and her despondent spirits had brightened. She passed through pregnancy with little of its inconveniences, and at midnight, May 23d, I received a message that she was in labor. I lost no time in responding to the call, as, judging from the rapidity of her former labors, she had repeatedly expressed the fear that I would not reach her bedside in time to deliver the child. She had been awakened by the discharge of amniotic fluid, and when I arrived labor pains had only commenced.

Digital examination failed to reach the presenting part which was above the brine. Palpation revealed the fœtal extremities applied to the mother's abdominal walls, and the head at the epigastrium. The back of the child could not be felt. The pains increased in strength and one hour later had forced the breech into the pelvic cavity. The penis and scrotum of the child were immediately behind the symphysis, further backwards was the anus, and in the mother's sacral cavity, was the sacrum of the infant. The hips failed to rotate, but passed down to the inferior strait transversely.

The patient was changed to the dorsal position and uterine contractions were supplemented by forcible manual pressure upon the fundus. In a short time the breech was born, passing through the vulva in its original transverse position.

The patient was again turned upon her left side; the body came through with a spiral motion and the right shoulder turned under the symphysis. As soon as the shoulders were delivered, the occiput having rotated forward, the child was drawn backwards towards the mother's perineum. The arms which passed up on each side of the head, were not disturbed, and while drawing the child in the direction indicated, efforts were made to bring the occiput down and deliver by extension. The attempt was unsuccessful, and not daring to risk the child's life by continuing my efforts in the same direction, the arms were brought down, the body carried forward toward the mother's abdomen, and delivery promptly effected by flexion of the head. The infant was well developed and cried lustily.

I have reported this case, although the attempt to deliver by Deventer's method was unsuccessful, because I think the fault may have been with myself and not the method.

The want of confidence which is natural to one's first experience with a new procedure, caused me to abandon it quickly when the head failed to come out by extension. Added to the want of confidence was the responsibility I felt that continued efforts might sacrifice the child, nor could I foresee whether or not further delay were in store for me by attempts to deliver in the usual manner, in case I were finally driven to it. In the hands of one practiced in the maneuver the result may have been different.

I shall repeat the experiment at the next opportunity, but with this difference, which is according to Deventer's rules, to place the patient in the dorsal position, the buttocks projecting over the edge of the bed, and to draw the infant downwards in the direction of the floor.

That the lateral position, however, is not a decided obstacle to the success of the method, is shown by the experience of Dr. Jones, reported in the discussion which followed the reading of Dr. Bartlett's paper. Referring to three cases he had delivered by the method in question, he said, they occurred with the mother upon the left side.

From the fact that the infant's pelvis was born with its transverse diameter in the direction of the short diameter of the outlet, it may be surmised that the infant was small. On the contrary it was well developed and weighed ten pounds.

Full particulars of Deventer's method will be found published in the "Transactions of the International Congress" (Ninth session, vol. 2, pp. 438–445).

One cannot read them without feeling that the obstetrican possessed a key to the easy delivery of the after-coming head. Deventer even declares that it is safer and easier to draw the infant out by its feet, even in head presentations, than to allow it to come head first.

MEDICAL PROGRESS.

LANDERER ON A NEW METHOD OF TREATING TUBERCULOUS AFFECTIONS.—The object being to cause cicatrization by inflammation artificially caused, the author, after trials of many things, has fixed upon Peruvian balsam. Sayre's remarkable success with this in spondylitic abscesses induced the author to try it. Applied as a plaster to tuberculous ulceration of glands, Peruvian balsam, though having no action at a distance, causes rapid healing. Internal tuberculous foci were injected by the author with the balsam in the following form: ℞. Bals. peruv., muc. gum. arab., āā 1.0, ol. amygd. q.s., ut fiat emulsio subtiliss., sod chlor. 0.7, aq. dest. 100.0. This emulsion was used in parenchymatous and intravenous injections. In fifty-one cases the balsam was used. In sixteen the glands were affected, and the balsam was applied as a plaster; any fistula were injected with the balsam in ether, or packed with gauze saturated with balsam; treatment lasted four to twelve weeks, and permanent cure was obtained. Two cases of fungoid ulceration were cured by division, scraping and packing as before. Twenty-nine cases of bone disease included two of the spinal column, one psoas abscess, and one lumbar abscess (the former was injected with the balsam in ether, the

latter was plugged), and three of the hip-joint; all cured. The other cases are given all cured or greatly improved at the time of writing. The lung cases were four, two being far advanced, and these were greatly improved by intravenous injections (1.0 gram twice a week). Two slighter cases were cured. Bladder-tuberculosis was cured by two injections (10 cubic centimetres of a 2.5 per cent. emulsion). The patient is at work three years afterwards. The above-mentioned emulsion is thus used. Five or ten drops are poured into a porcelain capsule, and a 0.7 per cent. solution of NaCl (filtered and made alkaline by a drop of caustic soda) is added drop by drop till the emulsion is made feebly alkaline, the yellowish-grey emulsion taking a greenish tint. The whole is strained through linen, and is now ready for use. For intravenous injections each specimen must be examined microscopically, and, if fat-drops larger than red corpuscles be found, must be rejected. The diluted emulsion only lasts a few hours, but the concentrated keeps for weeks. Parenchymatous injections are made deep to the bone, or into the distended articular cavity, or into fungoid masses; the quantity is usually from half to one cubic centimetre. The injection is painless, or nearly so. Intravenous injections are made by a fine cannula into a vein of the arm after its distension has been caused by a bandage applied higher up the limb rather loosely. If a little swelling arises as the injection is gently made, the cannula is not in the vein, and had better be withdrawn and inserted somewhere else. The quantity must not exceed 1 cubic centimetre. This treatment is not warmly advocated by the author in cases of pulmonary tuberculosis which are far advanced.—E. J. Edwards, M.D., in *Lond. Med. Recorder*, Dec. 20, 1888.

Disinfection of Surgeons' Hands. — A great deal has recently been said about surgeons' nails and nail-brushes in hospital wards. Bacteriologists have come to the conclusion that the usual washing of the hands with weak antiseptics is quite efficacious in killing pyogenic and specific germs on the hands, but does not destroy micro-organisms which lodge under the nails. Dr. Fürbringer, of Berlin, believes in washing the hands with soap, then in alcohol at 80° F., then in a sublimate solution. The alcohol is said to soak well into the nails. Drs. Roux and Reynès have tried experiments with alcohol on nails purposely infected. In 40 cases where the infection was experimental, and carried on in a laboratory, asepsis was proved in 33. In 8 cases, where infection was clinical, the hands being washed in the usual manner after touching infected fluids in wards, only 4 were proved aseptic after the above elaborate system of washing. Drs. Roux and Reynès nevertheless advocate this antiseptic ablution, noting that the nails are seldom so thoroughly rubbed after every operation as when an experienced physiologist cleans them after some special experiment. In all cases of enforced sanitary measures routine practices and habits must be taken into account.—*British Medical Journal*, December 22, 1888.

Smith on Treatment of Phthisis by Carbolate of Camphor.—Dr. R. Shingleton Smith records two cases of phthisis treated by subcutaneous and intrapulmonary injections of carbolate of camphor. Both cases improved greatly under the treatment. The injections consisted of ten, fifteen or twenty minims of a saturated solution of camphor in carbolic acid, and were at first administered subcutaneously, and afterwards into the lung-tissue about the diseased areas in the apices. The latter gave rise to no sign of lung irritation, and the subcutaneous injections produced slight smarting only. These were given at first every second or third day, but afterwards daily, and about fifty injections in all were used in the course of ten weeks, in the first case. In the second, the whole quantity injected in twenty-five days amounted to 245 minims, 60 minims having been diffused in the diseased tissues in the apex of the right lung. The intra-pulmonary injections were preferred by one of the patients, as they "did not hurt so much as the subcutaneous ones." A slight rise of temperature was observed after the injections in one or two instances, but no other evidence of irritation was noticed. —E. Clifford Beale, M.B., in *Lond. Med. Recorder*, Dec. 20, 1888.

Fatal Vomiting from Intestinal Stenosis. —The following case is recorded by Smith. A girl, æt. 18, was seized with uncontrollable vomiting, not feculent in character, for which no cause could be discovered. There was no fever, no meteorism, and no history of any intestinal trouble, except that the patient had on more than one occasion about a year previously passed blood with the stools. As all other treatment seemed useless, it was decided to open the abdomen. After a prolonged search nothing could be found, and a few days later death took place. At the *post-mortem* examination, the small intestine towards the lower part of the ileum was found to be narrowed for about an inch, so that it would scarcely admit the little finger.—*Centrblt. f. Chir.*, 1888.

An Application for Burns, suggested in *Centralbl. f. Therapie*, is the following:

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Lime water.	aa 6 parts.
Salol	1 part.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JANUARY 12, 1889.

LAPAROTOMY IN GUN-SHOT WOUNDS OF THE ABDOMEN.

In the columns of a recent number of our valued contemporary, the *Boston Medical and Surgical Journal*, there appears an article on this subject by DR. W. B. COLEY, who publishes an interesting series of tables relating to the treatment of these wounds. He has collected 74 cases and he divides them into three classes: 1, those operated upon within the first twelve hours; 2, those operated upon after twelve hours; 3, those in which the time is not stated. He quotes 39 cases in the first class, with a percentage of recoveries of 46.6 per cent. In the second class he quotes 22 cases, with a percentage of recoveries of 22.7 per cent. Class 3 contains 13 cases, with a percentage of recoveries of 57 per cent.

Dr. Coley refers to the opinions of M. Réclus, who claims that his experiments show that perforation is not necessarily present, and therefore laparotomy need not be performed unless the signs of perforation are unmistakable. Réclus advises that the following treatment should be pursued: 1. Firm compression of the abdomen to check hæmorrhage and fæcal extravasation; 2, administration of large doses of opium; 3, when this treatment fails, then resort to laparotomy.

Let us consider the grounds on which American surgeons advise operation. In the first place, the literature of the profession is clearly in its favor, although the pendulum of surgical opinion has vibrated back and forth.

"When a large Wound is made in the Cavity of the Abdomen, that not only lets out the Intestines, but also divides some Part of them, the Surgeon ought always to stitch up the wounded Parts of the intestines before he returns them. By this means we may not only expect the Wound to heal more readily, but the Discharge of Chyle and Fæces into the Cavity of the Abdomen, which would bring on great Mischief, is prevented."—*Heister.*

"But if the great intestines be wounded, and the excrements discharge that way, it may be reasonable to lay open the wound and stitch the gut with the glover's stitch, sprinkling it with some of the aforesaid agglutinatives, and reducing it back, stitch up the external wound of the belly, as hath been said."—*Wiseman.*[1]

"But the question may be asked here [in case of concealed wound] whether a surgeon may not prudently, in this case, enlarge the wound of the abdomen, that he may be able to discover the injured intestine, and treat it in a proper manner. Truly, I can see no objection to this practice, especially if we consider that upon the neglect of it certain death will follow, and that we are encouraged to make trial of it by the successes of others. Scacherus,[2] in Programmati Publica, Leipzig, ed. 1720, mentions a surgeon who performed this operation successfully."—*Heister.*[3]

"With very few exceptions bullet wounds into the abdominal cavity are fatal. It may be a question worthy of serious thought, in view of the hopelessness of our present practice, whether we ought not to cut boldly into the abdominal cavity, wash out the filth and, bringing the wounded intestines to the surface, endeavor to produce an artificial anus."—*Andrews.*[4]

"In examining the external wound, when no protrusion exists, should we find an escape of fæcal matter—which proves that the bowel has been perforated—the abdominal wound must be enlarged and the wound in the intestine closed by suture. This is the only expedient for saving life, for if the contents of the bowel are allowed to escape into the peritoneal cavity, a fatal issue must be expected."—*Chisholm.*[5]

"Already interference contrasts favorably with the do-nothing system. Reflection upon the results of ovariotomy, upon the results of gastrorraphy and enterorraphy, applied to protruded wounded viscera, leads unavoidably, in the writer's opinion, to a conviction of the propriety of incising the abdominal wall, when necessary, in order to expose and sew up the wounded gut concealed within the cavity, whether divided by a cutting instrument or shot. The obstacles to success are obvious, but it is a mortal peril which demands an extreme remedy."—*Otis.*[6]

"I have the deepest conviction that there is no more danger of a man's dying of a gunshot or other wound of the peritoneal cavity, properly treated, than there is of a woman's dying of an ovariotomy, properly performed. . . . . And by the application of the same rules that guide us in ovariotomy to the treatment of gunshot wounds penetrating the abdominal cavity, there is every certainty of attaining the same success in these that we now boast of in ovariotomy."—*J. Marion Sims.*[7]

"When any of these conditions are present, the duty of the surgeon is clearly to enlarge the opening in the abdominal wall or to make a new one in a more favorable location, sufficiently to admit of an examination of the viscera in the track of the wound, to detect and ligate bleeding vessels, to suture intestinal rents, and to thor-

[1] Wiseman, "Of Wounds of the Belly," book 5, chap. viii. London. 1676.
[2] This was a mistake. The author was Friderici, who made an inaugural address before Scacherus (*Otis*).
[3] Heister Laurentius, Institutiones Chirurgicæ.
[4] "Record of Battles Fought near Vicksburg," p. 34. Chicago. 1863.
[5] Chisolm, J. J., "A Manual of Military Surgery for the Use of Surgeons in the Confederate States Army," p. 350. Richmond. 1862.
[6] "Medical and Surgical History, War of Rebellion," part 2, surgical volume, p. 128.
[7] British Medical Journal, Mar. 4, 1882.

oughly cleanse the peritoneal cavity of extravasated matters."—*Pilcher.*[8]

"Primary abdominal section in the mid-line gives the best command over the damage done and furnishes the most feasible opening through which the proper surgical treatment of such damage can be instituted. Further, its adoption adds, but little, if anything, to the peril of the injury.—*Parkes.*[9]

"I desire now to call attention to the fact that operative interference for gunshot wounds of the abdomen has been put to a practical test and that it has been successful, and I hope that other members of this society may share my conviction that this plan of active treatment is now justified by these two successful cases, and that it should be adopted (within proper limits) to the exclusion of the 'let-alone policy.' "—*Bull.*[10]

"The known tendencies of penetrating ball-wounds of the viscera being admitted, the indication to operate follows of necessity on proof of the injury. By operation alone can the parts be put into such a condition that spontaneous recovery is probable, or it might almost be said, possible."[11]

"A penetrating wound of the abdomen, left without surgical interference, is attended always with great danger. If any vessels of size are divided hæmorrhage is an immediate danger, and peritonitis a serious and probably fatal complication. If the alimentary canal is opened, death is almost inevitable. The few recorded cases of recovery form such an infinitesimal proportion of the whole that they should carry no weight against interference. . . . . If it [the wound] extend through the wall the abdomen should be opened and the condition of the viscera examined."[12]

In the second places, the experiments of GROSS and PARKES, particularly the latter, show conclusively that the relative liability to perforation and of hæmorrhage have not been overstated. It is an unsound argument to urge that because PARKE'S experiments were upon dogs, their teaching should be rejected, for those experiments referred particularly to the organ wounded, and did more to fix surgical opinion in this country than any that had preceded them. As to the question of diagnosis, we now have a certain means of detection of perforation in the use of the hydrogen gas as advocated by SENN. It is only in cases of hæmorrhage that there can be uncertainty in the diagnosis—and unfortunately, this is of somewhat frequent occurrence. The evidences of severe shock or syncope would certainly be conclusive testimony as to the wound of a large blood-vessel, but in wounds of the smaller vessels, hæmorrhage going on insidiously, would almost as certainly prove fatal, as cases with the more pronounced symptoms. Nor would we feel safe in trusting such a patient to the results of the application of a body bandage, however snugly it may be applied. The dangers of median exploratory laparotomy are by no means great, and if it is found there is neither wound of intestine nor blood-vessel, the patient will run little additional risk, provided the operation be performed by an experienced operator.

It is gratifying to add, that as Americans we take pleasure in recalling that our Dr. Kinloch was the first in recent times to practice the operation, and that following Kocher's successful case, were two successful cases in 1885, one each by BULL and HAMILTON, in the order named, and BULL in the same year had the fourth successful case, and that the results of the experiments of our PARKES and our SENN have placed the teachings of American Surgery once more in the van, where McDowel placed it a half century ago.

[8] Pilcher, Lewis S., "The Treatment of Wounds," pp. 356–7. New York. 1883.
[9] Parkes, Chas. T., "Gunshot Wounds of the Small Intestines." Chicago. 1884.
[10] New York Medical Journal, Feb. 14, 1885.
[11] Greig Smith, "Abdominal Surgery." Second Ed. London. 1888.
[12] Wyeth, "Text-book on Surgery." New York. 1887.

THE INFANTICIDE REVELATIONS.

"O wad some power the giftie gie us
To see oursels as ithers see us.
It wad frae mony a blunder free us
And foolish notion."

The wish of Burns has been vouchsafed to several physicians of Chicago during the past few weeks, and to a few the glance in the mirror has not been a pleasant one.

One of the daily newspapers of this city, the *Chicago Times*, sent out a presumably captivating young woman who acted as a reporter for that paper to visit certain physicians and registered midwives. She represented that she was unmarried, of good family, that she had lapsed from the path of virtue and in consequence was now six weeks *enciente*. The tale was told with many a pearly tear trembling on her pretty little eyelids, and the physician interviewed was requested to relieve her from the consequences of her fault. A few readily consented, some gave the attractive young woman a moral lecture, others sent her away brusquely, and a few told her of persons believed to be engaged in the abortion business, and got rid of her as quickly as they could. The enterprising young person printed the respective interviews, in her own language, which in some instances made rather sensational reading and as a whole seem to convey the impression that the views of the medical profession as a body are more lenient toward the sin of abortion than they should be. It should be remarked, however, that

a large proportion of the older members of the profession were not approached. Those comparatively unknown were most frequently reported, and the statements now published will have to be substantiated in the courts, as one of the physicians implicated has begun suit against the *Times;* until then it will be well to suspend judgment.

It is a thankless task to expose so fearful a secret crime, but the *Times* has done well to bring public attention to the evil consequences of allowing abortionists to go on unchecked in their career of crime. But all the parties to infanticide are equally guilty, the instigators as well as the perpetrators, and while we look with pity on the unfortunate doctor whose weak sympathy leads him to commit crime to prevent disgrace to an unfortunate young woman; and with horror upon the professional scoundrel who makes it a business, let us also condemn the other party to the act. There can be no premeditated infanticide without the coöperation of the unwilling mother, and while hers is not infrequently the worst punishment it must be remembered that she deserves it. *The crime begins, therefore, with those who solicit the practice.* And it would have a wholesome effect if physicians instead of being gentle with such persons and delivering free moral lectures to them, would simply hand them over to the police.

It is all very fine to feel a deep sympathy with the best patron, Madame Crœsus, whose social life might be inconvenienced, or for one to have a tender feeling for the blooming Mademoiselle Dive, who is fearful of being disgraced publicly when the private disgrace is already hers, but such sympathy and tenderness are not common sense, and common sense is needed in dealing with the frail diplomats who come into a physician's office with a whole cargo of sighs, tears, cajoleries and entreaties. The times have changed since the Revolutionary days, when early marriages and large families were deemed as evidences of patriotism. Our people have forgotten that it is patriotic to have large families, and in consequence we see that it is the foreign population in our midst that have the bulk of the increase. Large families are now rare in American households, and while public sentiment remains blind to this growing evil it is useless to expect that the murderous trade of the abortionist may be extinguished.

The work of the *Times* is therefore to be commended, not less as an effort to arouse the public to a realization of the effect of continued popular apathy on this subject, than to expose the guilty.

The medical profession of Chicago, who do not claim to be better, are no worse than elsewhere. They have come out of this investigation better than would those of some other cities we could name; but whether a similar investigation is set on foot elsewhere or not, it is self-evident that if there were none to be patrons, there would be no abortionists.

Popular education on this subject should therefore at all hazards be stimulated rather than suppressed, and the erring should be taught that a "blush on the face is better than a blot on the heart."

EDITORIAL NOTES.

WORK FOR THE ASSOCIATION.—The American Medical Association is growing rapidly and yearly gaining in power, but it requires work by the members to increase it so that it shall become the greatest medical society in the world. We urge the members of the Association to look about them and whenever a member of a local society in good standing is found who is not already a member, urge him to send on his application to the Treasurer DR. DUNGLISON, without delay. Look at the example of the British Islands, and think what an association the medical men of this country could make if they only set about it in earnest!

THE NEW MARINE-HOSPITAL SERVICE LAW.—The following is the Act to regulate appointments in the Marine-Hospital Service of the United States which has just become a law:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That medical officers of the Marine-Hospital Service of the United States shall hereafter be appointed by the President, by and with the advice and consent of the Senate; and no person shall be so appointed until after passing a satisfactory examination in the several branches of medicine, surgery, and hygiene before a board of medical officers of the said service. Said examination shall be conducted according to rules prepared by the Supervising Surgeon-General, and approved by the Secretary of the Treasury and the President.

"SEC. 2. That original appointments in the service shall only be made to the rank of assistant surgeon; and no officer shall be promoted to

the rank of passed assistant surgeon until after four years' service and a second examination as aforesaid; and no passed assistant surgeon shall be promoted to be surgeon until after due examination: *Provided*, That nothing in this Act shall be so construed as to affect the rank or promotion of any officer originally appointed before the adoption of the regulations of eighteen hundred and seventy-nine; and the President is authorized to nominate for confirmation the officers in the service on the date of the passage of this Act."

From the above it will be seen that hereafter there is but one way to enter the Marine-Hospital Service and that is through the portals of the Medical Examining Board.

THERE are a little more than eighty thousand persons practicing medicine in the United States, of whom more than sixty thousand are regular practitioners. When one-third of the regular profession are members of the American Medical Association we can have the strongest organization, and the best medical journal in the World.

CHICAGO MEDICAL SOCIETY.—The Chicago Medical Society at its meeting held Monday, January 7, took action on the following report of the Judiciary Committee:

"MR. PRESIDENT.—At the last regular meeting the Judiciary Committee was formally instructed to investigate the truth of the scandalous newspaper charges against the moral and professional integrity of certain members of the Society, to the effect that they had consented to produce criminal abortion on the person of a young woman newspaper reporter in the employ of *The Chicago Times*.

"Of all members of the Society who have been thus publicly accused in *The Times* newspaper only one has appeared before your Committee and demanded a hearing—Dr. Andrew J. Coey. Your Committee has fully and fairly examined the charges against this gentleman and found that that the interview actually occurred, as published, and that the report of it is substantially true in every particular and is so acknowledged to be by Dr. Coey.

"The report of the interview shows that Dr. Coey neither consented nor refused to perform criminal abortion, but he made an appointment with the young woman for the following day, ostensibly for the purpose of examining her and ascertaining whether any impediment existed to the safe induction of abortion. This appointment appears to justify the inference that if no pathological peculiarities had been found he might have been willing to take charge of the case.

"This inference is not supported, however, by any specific committal on Dr. Coey's part. On the contrary, that his apparent intention was not his real intention is clearly proved by what followed; for in the same minute that the young woman was discharged from his consultation-room, Dr. Coey denounced her as an adventuress of some kind and expressed the opinion that she was not pregnant at all to his office companion, Dr. E. V. McDonald, who was sitting in the reception-room at the time and had seen the young woman as she passed through.

"Furthermore, Dr. Coey took immediate measures to secure the presence of a police officer in his office at the hour fixed by the appointment with the young woman on the following day. The police officer was present and under instructions from Lieuts. Shea and Kipley, of the police force, to keep track of the young woman if she were really found to be pregnant, and learn if and by whom criminal abortion was induced; and if she were not pregnant, as was suspected by Dr. Coey, to intimidate her into divulging her purpose in visiting him. All evidence is in the form of affidavits, and your committee does not question the accuracy of a single statement; hence the charges against Dr. Coey's character which are embodied in the headlines of the reported interview, and in various editorial discourses upon the same, are not only not justified by the language of the interview, but are shown by the events which followed to be without foundation in fact.

"Your committee also reports that it has investigated the professional status of Dr. E. H. Thurston[1] quite independently of the allegations against his moral and professional character which appeared in the *Times* newspaper, and found that he is not worthy of membership in this Society. Your committee recommends, therefore, with the full concurrence of Dr. Thurston, that he be summarily expelled. Respectfully submitted."

The report is signed by Drs. William E. Quine, chairman; E. J. Doering, and A. H. Foster.

HE ACCIDENTALLY SWALLOWED A TOOTH.—A special to the *Chicago Tribune* from Galena, Ill., says: John Edwards, an Illinois Central engineer, who was supposed to be dying of quick consumption, in a paroxysm of coughing last night emitted from his throat a bony substance, which, on examination, proved to be a large double tooth. A few weeks ago Edwards underwent the operation of having his upper teeth extracted for a false set, and during the operation, which was rapidly performed, one of the teeth, without the knowledge of either the patient or operator, dropped down the throat, it is supposed, and lodged in the windpipe, where it caused the irritation which was thought to presage consumption.

OBITUARY.—On Saturday afternoon, December 1, Dr. William M. Brinton, President of the Allegheny County Medical Society, died at his residence in Sharpsburg, after a short illness, of typhoid fever. Dr. Brinton was graduated at Jefferson Medical College in 1875, and immediately thereafter began practice in Sharpsburg. Dr. Brinton joined the American Medical Association in 1886.

Mr. Jordan W. Lambert, of the Lambert Pharmacal Co., of St. Louis, died in that City January 6, 1889. Mr. Lambert was one of the leading pharmacists in the United States, and an active and energetic business man. He will be greatly missed.

[1] Dr. Thurston is not a member of the American Medical Association.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

Regular Meeting, June 21, 1888.

THE PRESIDENT, HORACE C. WHITE, M.D., IN THE CHAIR.

DR. WILLIAM G. WHEELER, of Chelsea, Mass., read a paper on

SEPTICÆMIA,

of which the following is a brief abstract:

I wish to present one case to emphasize the following points:

First.—That blood poisoning may, and does, complicate low forms of disease, as in dysentery, typhoid fever, etc.

Second.—That septicæmia often complicates the after-treatment of ovariotomy, and is more frequently a cause of death than was formerly supposed.

Third.—Blood poisoning increases the hazard, and has been considered by some a bar to surgical interference with extra- and even intra-uterine fibroids.

Case 1.—My patient, a woman æt. 35; married five years, had no children. Menstruation regular but scanty; thin in flesh; general health fair. Her trouble was a mono-cyst, ovarian in character, of about three years' growth, weighing with contents about 20 lbs.

Operation.—I found extensive firm adhesions on the right side, both front and back, also to omentum and portions of small intestine. One layer of cyst wall was left attached to colon. The pedicle, which was not large, was transfixed, tied and replaced in cavity. I was obliged to tie eighteen bleeding points upon the omentum, fine catgut ligatures being used. The incision was 4 inches in length, which was closed with No. 9 silver wire sutures.

In twelve or fifteen hours later the patient had rallied from the operation, with slight vomiting and comparatively little pain, followed by a reasonable amount of sleep. The pulse and temperature were little disturbed, until the sixth day the symptoms were favorable, when tenderness and pain began in the right lower abdominal region. There was increase of temperature and pulse, great restlessness, with insomnia. The stomach and bowels became irritable, followed by great prostration, chills, sweating, and delirium, which symptoms continued to increase in severity until the tenth day, when the patient passed into a comatose state.

On the morning of the eighth day, four days after the appearance of the septicæmic symptoms, I detected a fulness in the right lower abdomen just under where the adhesions were found. I immediately removed two sutures from the lower angle of my incision and passed into the cavity a new English catheter; by this means I was enabled to evacuate two or three ounces of a thin fluid (*not pus*) about the color of prune-juice, having an unpleasant fœtid odor. The cavity was then washed out with a solution of carbolic acid two or three times, alternating with boracic acid.

From this hour all of those symptoms of septicæmia which had been so pronounced and threatening soon became milder; the temperature lowered, the stomach and bowels quieted; gradually the mind cleared, strength returned slowly, and, as it were, the patient came back to life again, making a gradual recovery. In three months from the day of operation she returned to her home and friends.

First.—In the examination of over 100 reported cases of blood poisoning, I find that in almost every case the patient's system was in a depraved condition, either due to old age, overwork, or a shattered nervous system. My experience has been that anæmic patients are very susceptible to the influence of and rapidly take on those conditions which tend to produce the most profound septicæmic symptoms. In any case where the blood condition is below the normal standard, following or due to low forms of disease, such as typhoid, etc., I believe that septicæmia will inevitably follow any capital abdominal surgical operation. It behooves us all to look well to the general condition of our patients before attempting any surgical operation.

Second.—It was formerly taught that death following abdominal section was always due to surgical shock. J. Marion Sims was the first surgeon to refute this idea. In my opinion a large percentage of the deaths were due to septicæmia, as in my own experience I have seen the most profound symptoms of shock relieved as by magic upon the evacuation of pent-up pus from a cavity and the institution of prompt and effectual drainage. In this case reported above had I not reopened my incision and improvised a more perfect system of drainage my patient would soon have been enrolled with the many victims to surgical shock, *according to the old teaching*. On the other hand, this was a typical case of septicæmia following ovariotomy, where life was saved by prompt drainage. We may lessen the number of cases of septicæmia by instituting at once the *most thorough drainage system possible*.

Third.—For the above reasons, viz., depraved system and poor drainage systems in use to-day, coupled with a lack (on the part of our surgeons of the present generation) of that physical determination, which will induce him to adopt such measures as shall enable him to cope with such conditions as may arise. To overcome this seeming bar to surgical interference with fibroids: 1.

We ought to study well our patient. 2. We should familarize ourselves with the minutest detail of the operation. 3. To adopt the surest system of drainage. *Insist upon perfect drainage*, and I am sure that septicæmia will be a condition rarely encountered.

DR. L. F. WARNER said that he had been much interested in the paper. The products of a wound, including the serous discharge, become poisonous when separated from the living body. The object of the older surgeon in allowing a wound to glaze by exposure to the air was to prevent any oozing into the wound cavity, and thus to prevent poisonous changes. The corrosive sublimate solution of the modern surgeon acts in the same way by coagulating the albuminous elements of the tissues. These poisonous changes in the discharge from wounds take place very rapidly and the fatal result may occur very early. The exact character of this septic fluid is not known, and we do not yet know accurately what changes occur.

DR. H. C. WHITE said there are undoubtedly many forms of septicæmia which are not yet recognized; diphtheria, in its later stages at least, is a form of septicæmia. His treatment of this disease has been on this theory, and its success had strengthened his belief that all diseases of a septic character can be best treated by remedies which are directly antagonistic to the agents which cause the disease. The most common of these remedies are acid sulphurous, the sulphites, the hypophosphites, etc. Experiments have proven that septic material injected into animals causes death, while exactly similar matter injected into an animal which is under the influence of antiseptic remedies does not cause death. Whenever you succeed in securing the full effect of such remedies in diphtheria, recovery may be expected.

DR. R. C. MCDONALD had used sulphurous acid and the sulphites with success in different forms of septicæmia.

DR. A. P. CLARKE said that without doubt antiseptic remedies and agents were used prior to our day, but with no definite understanding of their origin or mode of action. Even Lister believed the germs of disease came from the air, but more recent investigation shows that the infection of wounds more usually results from unclean hands and instruments. Dr. Clarke said that he had no faith in the use of antiseptic drugs which act through the circulation.

DR. HANSCOMB asked if it were possible to change the blood with antiseptic agents to an extent sufficient to affect the general system.

DR. L. F. WARNER replied that we could kill our patient before that end was gained.

DR. H. C. WHITE said that our object in the use of such agents was to so sterilize the field that germs can not live.

DR. M. L. BROWN believed that we do not have sufficient local treatment in diphtheria. The disease is local at first, and vigorous local measures may cure it.

DR. JACKSON, of Fall River, a guest of the Society, said that his ideas in regard to the exact character of septicæmia were shadowy. The first practical question which should be investigated is: By what avenue does the disease germ enter the body? Is it by the air, by instruments, or is it developed in the organism itself? When this question is settled, then our remedies or agencies can be intelligently directed to guard the system from infection. In some forms of septicæmia sulphurous acid and the hypophosphites are of great value.

DR. L. F. WARNER, in referring to cholera, said that he had no fear of the germ if it did not find a suitable home. As chloasma will not develop in the skin of a perfectly healthy person, and the pollen of a toadstool will not germinate unless it finds congenial soil, so cholera will not attack a person who is well and who lives among hygienic surroundings. Something must prepare the field for this disease, as bad air, imperfect drainage, and improper food.

DR. F. C. BURT said that we do not know the exact cause of trouble in wound infection, neither do we know the exact relation of microbes to these changes. We do know, however, that germs always appear in wounds thus affected. Dr. Burt had had no experience with septicæmia in operative work. There is no case of operation without some elevation of temperature, but it is a question whether the condition is identical with the process usually known as fever.

DR. W. SYMINGTON BROWN said that the paper was a very practical one. In considering a question like septicæmia there were two elements to be treated, *i.e.*, the theory and the practice. In the past we have had too much theory. The captain of an ocean steamer uses only known facts in controlling his vessel, so the surgeon should depend solely on what is actually proven in his work. A man has only a certain amount of mental energy. If then a great part of this is expended in the study of theories, he has less to apply to the more practical work of his calling. There is much we do not know in regard to poisoning by germs, but we do know that gases developed in the animal organism may cause death.

A TOOTH AS A SOUVENIR.—As this is the season of the year for exchange of gifts, St. John's county comes to the front with the most novel on record. A young man near St. Augustine, though having sound teeth, had them to near for beauty, so he had his eye teeth extracted, took them to a jeweler, where they were polished, dyed and mounted in gold as a pair of earings for his best girl.—*Savannah News.*

American Medical Association.

Section on Dermatology and Syphilography.

L. DUNCAN BULKLEY, M.D., CHAIRMAN.

F. DUNLAP, M.D., SECRETARY.

FIRST DAY, MAY 8, 1888.

The discussion on the

ETIOLOGY AND TREATMENT OF ECZEMA

was opened by DR. BULKLEY, who said:

The question presented for our discussion this afternoon is one of such magnitude that it is manifest that not more than the outlines for consideration can be sketched at present.

In the etiology of the disease we have to distinguish between the predisposing and exciting causes of eczema, between the constitutional state or condition, and the special determining causes of the attack, internal and local.

We know as yet nothing of the real internal causation of eczema except as we can observe clinical facts of the association of certain symptoms or conditions of system in connection with and apparently causative of the disease.

I believe the first element to be recognized is *debility* in some form or other. Eczema never occurs except as an evidence of lowered vitality, either general or local. The local element will be considered later in connection with the local exciting causes of the eruption.

The evidences of debility in eczema patients take three general forms: First, those which relate to digestive and excretive functions; second, those which affect the nervous system and present neurotic symptoms; and, third, those connected with nutrition, or the life process of the body, known as the scrofulous or strumous state.

The first of these is by far the most common, forming fully one-half of all cases, and represents what is known as gouty eczema; the second, or nervous causes, may exist alone in a certain proportion of cases, but often enters as an element in patients belonging to the first class; the third, or strumous condition, is less common than the others, and rarely determines the disease alone, without the intervention of the two preceding causes.

This lowered vitality may come from many causes. In some instances simple over-work or worry, producing nervous exhaustion, may induce and keep up the disease. In more cases assimilative debility, manifested by disorders of the digestion and excretions, plays the most important part, while in other instances a strumous condition of the system seems to be the main factor, and in a few instances heredity is an important element.

These elements in the causation of eczema may be briefly tabulated as follows, which, of course but imperfectly suggests many of the true etiological factors in the disease.

CAUSES OF ECZEMA:

- Constitutional and general causes.
  - 1st. Predisposing.
    - Heredity.
    - Gouty or arthritic diathesis.
    - Neurotic diathesis.
    - Strumous diathesis.
  - 2d. Exciting
    - Debility.
    - Digestive disorders.
    - Nervous depression.
- Local or external causes.
  - 1st. Predisposing.
    - Climatic.
    - Occupation.
      - Sedentary.
      - Standing.
      - Irritating.
    - Diet.
  - 2d. Exciting.
    - Climatic.
      - Sudden exposure to heat and cold.
      - Prolonged exposure.
    - Occupation.
      - Long confinement.
      - Long standing.
      - Irritants.
    - Diet.
      - Acids.
      - Sweets.
      - Tobacco,
    - Irritants,
      - Soaps.
      - Ointments. Scalds, burns, blisters, and other irritants.

Digestive derangements are undoubtedly the most important elements to be considered etiologically in eczema, and again and again their effect may be observed by careful study in many cases. Acidity will always aggravate an eruption of eczema of any extent, and constipation will often be followed by fresh outbursts of the same.

DR. ZEISSLER, of Chicago, said there are two theories concerning eczema: The first, advanced by Hebra, that eczema came from local causes. His strong argument in favor of this theory was, that he could produce a local eczema in any individual, in any place, and at any time. His successful treatment lent weight to this theory. The second theory, held extensively in England and America, represents eczema as a constitutional disease, due to ill nutrition. The truth probably lies between these two theories. Many cases are no doubt due to local causes, *e.g.*, eczemas of washerwomen, shoemakers, surgeons, exposure to sunlight, etc. These may, however, be explained by individual peculiarities. Many cases are undoubtedly due to internal causes, but to ascribe all cases to constitutional causes is to transcend our knowledge. Eczema in children is sometimes due to nervous causes, as in teething. Rheumatism is a cause of chronic eczema. Disturbances of digestion are too often blamed as the cause of eczema, for the number of cases of indigestion is out of proportion to the number of cases of eczema, except in infancy. Whether eczema be due to organisms remains to be seen; if so, many subdivisions of what we now regard as one disease will have to be made. I believe in local treatment, but my views have, of late, been modified. I limit the use of arsenic to chronic, dry eczema.

DR. SHOEMAKER had observed a number of cases of eczema accompanying rheumatism. In these cases the eczema persisted as long as the rheumatism lasted. The rheumatic condition is

often overlooked. A torpid condition of the liver is often found. Many remedies might be named. He would call especial attention to the use of arsenic by hypodermatic injections and suppositories in persistent cases which had resisted the same remedies given internally. In cases where the disease is limited in extent and the infiltration marked, hypodermatic use of arsenious acid or arsenical salts two or three times a week, increasing the dose from one-tenth to one-half grain, has proved beneficial. In cases where this has not been permitted he has had good results from giving by the rectum an arsenical salt, increasing the dose from one-fourth to one grain every other day.

There is another class of remedies, namely, the surgical or mechanical method. These are massage, faradization and galvanism. Old cases where other remedies have failed have yielded to massage, the skin becoming soft, and the infiltration disappearing. In other cases the faradic current has been equally successful. Galvanism with a strength of ten, fifteen, or even twenty cells, pressed lightly upon the skin has afforded as ready relief as massage.

DR. RAVOGLI said, in considering the etiology, it is necessary to look at the general condition of the individual. The same cause often works different in different individuals. This is due to the general condition of the skin, whether it is soft or tough. Thus we find that age makes a difference. The symptoms in children are entirely different from those in adults. It is more acute in children, and in old age more chronic and inclined to the scaly form. He did not believe in a scrofulous eczema. Eczema is a catarrhal condition of the skin. Scrofulous subjects may, however, be more predisposed to eczema. Obstacles to the circulation, as scars, fractures, and varicose veins, are sometimes a cause of eczema. Had had excellent results with the use of salicylic acid and resorcin in eczema of children.

DR. REYNOLDS, of Chicago, said that the causes of eczema were both local and constitutional. He relied most upon the local treatment, never losing sight of the constitutional condition, which may aggravate or prolong the disease. For the local treatment, he divided eczema into acute, sub-acute, and chronic cases. The treatment of the first was soothing, of the second soothing and mildly stimulating, and of the third stimulating. The other constitutional conditions, of course, require their proper treatment.

DR. RICKETS, of Cincinnati, said that he had seen a number of cases in the city during the late epidemic of typhoid fever, and had invariably found an excess of acid in the urine. What relation there was between this fact and the eczema he did not know.

DR. FLEISHNER, of New Haven, said that the gouty eczema was a new form to him. That eczema was due to blood-stasis, either venous or arterial. He believed struma a cause. He considered that Hebra's experiment in the production of eczema proved nothing, nor was it established that it was caused by special occupations. Such coincidences might be due entirely to similarity of conditions. In the treatment he had found arsenic of great value, but he uses it less than formerly. He believed in the three-fold division of the disease. He had obtained good results from mild external treatment, especially from the use of the ointment of rose-water. In some cases he found great benefit from free purgation.

Dr. William T. Corlett, of Cleveland, O., read a paper on

A CLINICAL STUDY OF SO-CALLED PRAIRIE ITCH, LUMBERMAN'S ITCH, ETC., WITH A CONSIDERATION AS TO ITS ENTITY.

(See THE JOURNAL, vol. xi, p. 517.)

DR. ZEISSLER opened the discussion of Dr. Corlett's paper by saying that the cause of the so-called prairie itch was ignorance in regard to skin diseases. The doctor related several incidents showing the ignorance of many of the general practitioners with regard to dermatology.

DR. REYNOLDS said that his practice in the West had given him opportunities for seeing many cases of this so-called new disease. He had always found that this diagnosis was made by men who were not especially well posted in dermatology. All the cases of prairie itch he had ever seen, were typical cases of eczema. He saw little of scabies, but many cases supposed to be scabies were, in reality, eczema. The peculiarity of the prairie itch is the appearance of contagion, which is thought to distinguish it from eczema. This imaginary contagion may be due to the fact that all of a family are under the same hygienic, dietetic, and local conditions. Itching seems to be almost contagious, and the scartching ensuing may occasion a disease of the skin.

(To be concluded.)

Medical Society of the District of Columbia.

Stated Meeting June 13, 1888.

DR. C. W. FRANZONI, IN THE CHAIR.

DR. JOHN B. HAMILTON read a report of

TWO CASES OF SCALDING OF THE AIR-PASSAGES BY THE ACCIDENTAL INHALATION OF STEAM, WITH REMARKS.

DR. HENRY D. FRY read a

CASE OF BREECH PRESENTATION (SACRO-POSTERIOR).

(See pages 49 and 51.)

DR. SMITH said there were two questions to be considered in connection with the paper read by

Dr. Fry. The first is, Was this case one calling for the application of Deventer's method? The other, Was Deventer's method followed in the treatment of this case? Having studied Deventer's method he had come to the conclusion that it was not an efficacious one. In only a small proportion of head-last cases was interference called for, and these were usually cases in which extension had taken place and the chin become fixed above the symphysis. Dr. Smith would not admit that a method which permitted the arms to be applied to the sides of the head, and thus increasing the bulk of the body which had to pass through the pelvis, was founded upon a scientific basis. Cases in which the followers of Deventer would apply force in effecting delivery, Dr. Smith would leave to the natural forces. If satisfied that the woman was not able to extrude the head of her child, he would apply forceps with the expectation of effecting delivery in a more satisfactory manner. He did not approve of the manner of Deventer, but did most cordially endorse the use of forceps to the after-coming head.

DR. FRY, in closing the discussion said, the little experience he had had in using the forceps in head-last cases bore out the testimony of Dr. Smith. So far as the application of the instrument was concerned, it was little if any more difficult than in head-first cases. But instrumental aid is only employed after having failed to deliver the head by the usual methods. The important question is, What is the safest and quickest mode of effecting delivery manually? Now Deventer's method offers several advantages. Dr. Busey has mentioned the protection of the vessels of the infant's neck and of the umbilical cord. Another is the "fender" effect of the extended arms, that is, the arms by bridging over the constriction formed by the neck prevent the cervix from contracting and holding the head. This is sometimes a cause of fatal delay in head-last births. Still another advantage is the gain in time over the common method of bringing down the arms. This is sometimes a very difficult maneuver and the child may die before it can be accomplished.

I fear from the objections Dr. Smith made to leaving the arms extended that he has not carefully studied the mechanism of Deventer's method. His objection would hold good if the purpose were to deliver by flexion of the head; the arms would then oppose the movement. In delivery by extension, however, they are not in the way; by the shoulder attachment they act as levers, so that when the body is drawn in the proper direction the head tends to glide forwards between the arms and the occiput to slip out under the symphysis. Dr. Smith objects to *dragging* out the after-coming head. The force applied in this method is not for the purpose of pulling the head out in the axis of the outlet; it is simply to inaugurate the movement of extension. By drawing the child's body backwards and downwards we depress the occiput and raise the chin—this supplemented by strong uterine and voluntary efforts delivers the head by extension.

I would state that anæsthetics were not used in this case and that my attempt to deliver the child was freely seconded by the voluntary efforts of the patient. I have said my confidence in the superiority of this maneuver over the ordinary methods of manual delivery of the after-coming head was not lost in consequence of this failure. I shall try it when occasion offers and will place the patient in the dorsal position, instead of the lateral, although, as shown, the latter is not opposed to the success of the undertaking.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, November 1, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. MONTGOMERY reported a case of

VAGINAL HYSTERECTOMY,

with the following history: Mrs. M., a patient of Dr. T. O. Noch, 40 years old, the mother of five children and the victim of a large number of miscarriages, has been suffering for the last six years with frequent hæmorrhages, which for the past few months became almost continuous. He saw her in consultation with her doctor some months since, and upon examination found an excoriation on the posterior lip extending into the uterine canal. It was advised that the surface be touched with chromic acid and subsequently treated with soothing applications; if there was not rapid improvement following this course, a section should be removed for microscopical examination. Failure to arrest the disease and the demonstration of the presence of epithelioma by the examination of a competent microscopist, led to the decision to proceed to the extirpation of the organ. October 4, at the request of Dr. Noch, and assisted by him and Drs. West, Rively and McCroskey, he had performed the operation. The patient, anæsthetized, was placed in the lithotomy position, the vagina separated by retraction and the cervix transfixed by a ligature. The vaginal mucous membrane was cut through, encircling the cervix, the submucous tissue separated to the peritoneum in front and back, the broad ligament cut laterally sufficiently to make sure to free the ureters from injury in securing the ligaments. The opening was now made into the peritoneal pouch posteriorly and a large sponge inserted, two fingers inserted pushed the fundus forward and the opening anterior was completed. A pair of strong forceps, so constructed as to make equal pressure in their

whole length, were applied upon either side of the uterus, and the organ removed. Some vessels not included in the compression forceps continued to bleed so that a number of small forceps were applied. In all some eight forceps were applied and left hanging from the vagina. The sponge was withdrawn from the pelvis and the vagina lightly packed with iodoform gauze. The small forceps were removed at the end of thirty hours, and the large ones in sixty. The convalescence of the patient was uninterrupted and without event. The highest temperature reached was 100°, on the third day.

DR. MONTGOMERY also presented a case of

SUPRA-VAGINAL HYSTERECTOMY.

The woman, æt. 29 years, married, never pregnant, has been suffering for several years from severe menorrhagia. One year ago he saw her with Dr. Strittmatter, and upon examination found a large fibroid uterus. She presented evidences in her blanched face of having suffered from severe hæmorrhage. The removal of the uterus, supra-vaginal, was advised. She was advised by her friends to consult other parties, who informed her that such an operation would be certainly fatal and advised the removal of the ovaries. The hæmorrhage still continuing, she went to Dr. Strittmatter's private hospital, and at his request Dr. Montgomery performed the operation, in which he was assisted by Drs. Strittmatter, Moylan, and Messrs. Starkey and Sangree, medical students. An incision was made about six inches long, and the tumor with difficulty lifted up. The ovaries were enlarged, cystic, adherent and behind the uterus. The removal of the uterus was more readily accomplished than would have been the removal of the ovaries. With the purpose of returning the pedicle, the neck of the uterus was surrounded with a rubber ligature and the tumor removed, leaving two large flaps; these were sewed together by a number of continuous sutures of catgut until the flaps were completely coapted. Upon the removal of the ligature, however, there was so much bleeding that it was thought better to use the Tait clamp. The peritoneum was sewn fast to the stump of the uterus below the clamp. One ovary had been removed and the other, owing to extensive adhesions, was permitted to remain. The wound was closed with silk-worm gut, dusted with iodoform and covered with iodoform gauze and absorbent cotton. She stood the operation fairly well and suffered but little from shock. The following day the temperature was over 104°. Believing it to be due to the dressing, Dr. S. applied a carbolized gauze dressing, and the next day the temperature was 99°. Her subsequent convalescence was all that could be wished for, and the wound has now healed, with the exception of the lower angle, where the stump was fastened.

DR. MONTGOMERY read the history of a case of

TUBAL PREGNANCY

for Dr. Noch.

Mrs. —, 28 years old, married, has had four children, labors normal. Had menstruated regularly until August 17 last, with no evidence of it since that time. She thought herself pregnant and felt nothing unusual. She arose one morning from her bed and fell to the floor. She went back to bed and, not improving any, Dr. N. was sent for. He found her with a very pallid, pinched and waxen-like condition of the face; body and extremities cold and perspiring. Respiration was very rapid and shallow and the breasts cold; heart-beats regular but very weak; pulse small and compressible, and very rapid; temperature under 94°. There was marked stupor, but she could be roused, with difficulty, to answer questions. The uterus was somewhat enlarged, cervix slightly softened, and there was a gradual oozing from the os of a coffee-colored fluid. She had very little pain, but felt extremely weak. Her whole appearance indicated internal hæmorrhage. The diagnosis of tubal pregnancy with rupture was made. Laparotomy was considered, but deemed useless for fear the etherization would cause heart failure and death on the table in consequence. Diffusible stimulants were freely given and the local application of heat was used, in the hope that reaction might occur and laparotomy be possible. She continued to fail and died at 10:30 P.M., never having recovered from her shock. The post-mortem revealed an abdomen filled with blood clots. A small fœtus was found in the left inguinal region, floating in its sac, which was still unruptured. The tube was found to be ruptured midway between the uterus and ovary, leaving the placenta still in the tube. Development had advanced to about the seventh or ninth week.

DR. MONTGOMERY then exhibited a clamp he had devised for clamping the broad ligaments in cases of vaginal hysterectomy. The two blades were each grooved and could be closed with a parallel motion. They were joined at the top by a permanent joint. The surfaces of the blades were long enough to include the whole ligament in one grasp.

DR. WM. GOODELL was sorry he had overlooked the fact that Dr. Montgomery had a case of this kind to present. He should like to have brought a pair of Doleris' forceps which he received through the kindness of Dr. Lusk. It is a clamp analogous to the one shown, but it has the obstetric lock. The blades can be disarticulated, and one of them ends in a short hook by which the broad ligament is caught at its upper edge and brought down. He had not had occasion to perform the operation since he had received the clamp, but he had had two cases, one of which was fatal. The operation with the ligature was a tedious one,

and the use of the clamp must shorten it. He believed that we were indebted to Richelot for the clamp.

DR. J. M. BALDY asked how Dr. Montgomery would apply his clamp. It was much like the one figured in Greig Smith's book, except that it was permanently locked above at the joint, where Smith's could be taken apart, one blade introduced on each side of the ligament, and then the joint made above. He could not see how this one could be easily applied unless the abdominal cavity were opened and it was slipped down from above.

DR. WM. PARISH had seen the description of a clamp with separable blades, the deviser of which he could not recall. One of the blades has a long fenestrum open at the distal end, and the other blade fits into this open space. This gives uniform compression of the broad ligament. With the instrument shown the compression may not be uniform.

DR. MONTGOMERY said that in the majority of cases there was not much infiltration of the ligament. After cutting the ligaments in the manner described, the uterus can generally be readily everted and the fundus of the organ brought to the vulvar orifice, and the clamp applied from the outside. Even in those cases in which the ligament is not readily drawn out, he saw no reason why the instrument should not be pushed into the abdominal cavity and one blade brought down on each side of the ligament. If the instrument was clean it would do no harm to the peritoneal cavity.

DR. BALDY said that the specimen of tubal pregnancy was interesting as demonstrating Tait's theory of the pathology of extra-uterine pregnancy. Tait holds that rupture takes place into the broad ligament, and that the fœtus then goes on to develop or a secondary rupture subsequently takes place into the abdominal cavity. This process is most beautifully shown in this specimen. The cavity of the tube and broad ligament form one, and the rupture has taken place into the peritoneal cavity.

DR. H. A. KELLY described some *glass catheters*. Some five years ago he was hard pressed to catheterize a woman suffering from a distended bladder, not having his catheter with him and being at some distance from his office. He took the crooked glass tube out of the baby's feeding-bottle and drew the water with perfect ease. Since that time he had more or less constantly used glass catheters which he had had constructed for the purpose, and he placed far more confidence in the glass than in the metal catheters. The manifest requirements of a good catheter are that it should be easy to introduce, draw the water quickly and be easily cleansed afterwards. The first two requirements are readily answered by any material of which catheters are commonly made. In the last lies the difficulty. It is impossible to be sure that the inside of the catheter is clean. He has hitherto directed his nurses in his hospital, where the catheter is in constant use, to keep them, when out of use, in boiling water. He is now using glass catheters, constructed like those he exhibited. They are very cheap, safe (never breaking when in use), and cleansed with ease and certainty. In a hospital a number can be kept standing in a jar containing a disinfecting solution. The device of catheterizing with a glass tube is so simple that he was sure many present or elsewhere must have resorted to it long before this. He was also not surprised this summer when he found well made glass catheters for sale at the instrument makers in Berlin. He presented two patterns, which were sold by Gemrig at 25 cts. each.

DR. KELLY also read a paper on the distribution of hairs on the female genitals, to which he gave the title of the *Female Escutcheon*, pointing out the characteristic differences between the male and female types, as well as the development of the *escutcheon* at puberty, its persistence throughout the period of sexual activity, and its disappearance in old age. Dr. Kelly also drew certain conclusions as to the value of the escutcheon in cases of retarded development and doubtful sex.

DR. T. M. DRYSDALE remarked that he was positive that after death or before the sex could not be told by the distribution of the pubic hairs. He had seen the two types, that of man and that of woman, run so nearly together that no reliance whatever could be put on this.

DR. WM. GOODELL stated that Caspar, in his "Forensic Medicine," had referred to the different distribution of the pubic hair in the male from that of the female, as a means of diagnosticating the sex in decomposed bodies. Dr. G. did not know what rôle the pubic hair played in the economy. It certainly cannot serve as a pad, because in Mohammedan nations the genitalia of both sexes are scrupulously depilated.

DR. SHOEMAKER said a reference to this subject may be found in the "American System of Gynecology." Dr. Kelly does not "regard this as an absolute rule." He has seen the hair extend to the umbilicus in the female as in the male, but has frequently noticed some of the points to which he has called attention. He is correct in regard to the general type.

DR. STEWART said the rule among the Indians is to have the hair extracted and not shaved. Four years ago, while traveling in the West, he was shown some photographs of nude Indian women and had inquired why there was no exhibition of pubic hairs, and was told that they always had them extracted. He thought the use of the hair was for the protection of the vulva, just as the eyebrows and lashes were for the protection of the eye from perspiration, etc.

DR. KELLY was glad that the discussion had brought out several interesting points in natural

history and in anthropology. In the Eastern countries, where it is a disgrace for a woman to have hair on her genitals, they have a saying of reproach, "thou son of a woman with hair on her parts." The male type is very different from the female type. It is rare to find in the female more than a few scattering hairs run up to the umbilicus. He called attention to the subject as a complete picture. Dr. Cox, in the last number of the *American System of Gynecology*, says that in examining 600 or 700 women in Vienna, he found only six or seven in which the hair tended to go towards the umbilicus, which were rather of the male type. This is an interesting and important fact.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR REGULAR CORRESPONDENT.)

N. Y. Academy of Medicine—Acute Traumatic Tetanus—Cerebral Syphilis—New Hospitals—Extra-uterine Fœtus Delivered through the Rectum.

At the December meeting of the Section on Practice of the Academy of Medicine Dr. J. C. Minor presented a valuable contribution on the treatment of acute traumatic tetanus. It was highly philosophical in spirit, and it seems reasonable to suppose that if the principles on which it was based could be carried out generally the present frightful mortality from this disease would be materially lessened.

He assumed at the outset that the disease was the manifestation of a poison due to the tetanus germ and produced by the formation of ptomaines as a sequence of its germ origin. The discoveries of Nicolaier, in 1884, and the subsequent investigations of Carle, Rosenbach, Shakespeare, Brieger, and others, had demonstrated, he said, that tetanus is a blood disease, infectious, inoculable, and having its origin in a bacillus, and that from germ cultures at least three poisonous alkaloids could be separated, viz.: *tetanine*, *tetanotoxine* and *spasmotoxine*. We had, therefore, to deal with a toxic condition. As to the prevention of the disease, the fact that a high temperature destroys the tetanus germ pointed to a possible local prophylaxis in the primary dressing of wounds.

As had been well said, he continued, the healthy working of a nervous centre required two qualities which were equally necessary, viz.: a power to act when called into play, and a power of remaining at rest. In tetanus the latter was lost, inaction becoming impossible because excitation was constant. Even when the tonic contractions diminished in force nervous energy accumulated during the remission, to be discharged later on as a paroxysm of increased tension or spasm. The disease had a duration, in average cases, of three or four weeks. There seemed to be a definite limit to the production of toxic material, and the disease, having run its course, terminated in recovery under certain conditions. That these conditions were not often fulfilled, however, was shown by the mortality, which, according to Gowers, was nearly 90 per cent., a rate which afforded sufficient warrant for better and more systematic methods of treatment. The fact that the disease was self-limited should encourage the hope of success, provided the patient could be protected against its force for a definite period, and the mortality lists showed that this period consisted of the first and second weeks of the disease, the acute stage of tetanus. Recovery, therefore, depended mainly on the treatment during this time.

He admitted that we could neither eliminate or destroy the poison of tetanus, and that the disease once started was beyond the reach of direct methods of antagonism. But when, he said, we consider the limitation of the disease and the fact that its activity was expended upon the cord and medulla, we are led to the inference that if we could so act upon the central nerves that the force of the disease would be spent upon a benumbed tissue, if we could so modify the functions of the cord as to materially diminish its reflex excitability until the nerve storm had passed, we could accomplish the most essential end of treatment. The problem before us was, therefore, how to put the cord "in splints" physiologically, to do this in the shortest possible time, and to maintain this condition of modified function at least two weeks.

He did not believe it possible, except by profound anæsthesia, to obtain complete relaxation of all the muscles in the first period of an acute attack of tetanus without incurring as much danger from the remedies employed as from the disease itself. The object of treatment was not to abolish the manifestations of the disease, but to control them to such a degree as to maintain a relatively safe condition long enough for the disease to expend itself. The effect of the disease upon the muscular system was the main point of clinical significance. Beginning with mere stiffness of the jaws and neck, the muscular tension increased and subsequently involved the muscles of the abdomen and chest. At times a sudden increase in the degree of tension occurred as a paroxysm or convulsive spasm, affecting the whole muscular system, producing episthotonos or other distortions, and threatening death by asphyxia from tonic contraction of the respiratory muscles.

It was to be noted, then, that we had a period of remission and a period of exacerbation, with a certain rhythmic rise and fall of nervous excitability. The condition during the first stage of the disease was one of constantly increasing vio-

lence; the spasms growing more and more severe, and the remissions shorter or less pronounced, until in from one to two weeks the disease culminated in a spasm of extreme violence which usually ended the case. The termination was not always fatal, however, as this might be the critical discharge, from which the patient, if he survived, would pass at once into the declining stage of the disease. Other causes of death might occur in the form of simple exhaustion, cardiac failure, or accidental complications.

It appeared, therefore, that if we could eliminate these convulsive paroxysms from the disease it would cease to yield such an extreme mortality, and the aim of our treatment, consequently, should be to prolong the remissions and modify or absolutely prevent the paroxysms. Now it was a well-known fact, Dr. Minor went on to say, that when the functions of the nervous system are under the control of any agent that modifies them, they are not easily affected by any other agent, and in tetanus we had a toxæmia of which tetanine was the genetic agent. This poison produced a marked influence on the functions of the cord, increasing its reflex excitability; and if we attempted to counteract this effect by agents which depress the functional activity of the cord, we should find that ordinary doses produced little or no result, because the nervous system was already under the control of a powerful modifier of function. Hence toxic doses would be required to produce therapeutic effects. On the other hand, if we once obtained control of the nervous system, and maintained that advantage by using our remedies in doses sufficient for the purpose, neither tetanine nor any other agent would easily regain control of the functions thus modified.

Assuming that all remedies useful in the treatment of tetanus must possess the power of depressing the functional activity of the cord, the choice of remedies, he thought, was not of more importance than the method of using them; so that a poor remedy well used was better than the best of remedies inefficiently given. The main object being to intoxicate the cord, so as to depress its normal excitability, it was evident that quite a wide range of drugs was at our disposal. The ones to which he gave the preference were calabar bean, chloral and the bromides, with an occasional resort to chloroform. Chloroform, calabar bean and chloral are the most efficient in the first period of the disease, while the bromides, and also the salicylates, came into play during the declining stage.

In the first stage he considered that there were three indications to be fulfilled: 1. to lessen muscular rigidity; 2. to prevent convulsive spasms; and 3. to carry the patient through the crisis. The three remedies named were not equally adapted to the purpose in view. Chloroform, for instance, had only a limited use, but within its range of adaptation its action was unrivalled. It was to be employed in those case of rapid development, occurring soon after an injury, in which the violence and frequent recurrence of the paroxysms threatened an early and fatal termination. Again, it might be necessary in cases of slower development in which the disease, either from neglect or inefficient treatment, had been permitted to get under full headway. Its action was sure and rapid, and, carried to the degree of narcosis, it gave us complete control of the functions of the cord, abolished reflex excitability, and held the disease in check. This point attained, Dr. Minor advised that anæsthesia should be continued long enough to transfer the control of the functions of the cord to some other and safer agent. During anæsthesia, then, we might administer chloral, calabar bean, or any remedy suitable for hypodermic or rectal use, and, after waiting twenty or thirty minutes for absorption to take place, suspend the chloroform.

Of the two agents mentioned he considered calabar bean preferable, because its action is confined to the same field in which the tetanus poison operates, and is the nearest approach to a physiological antidote to tetanine at our command. The variable character of the drug as usually found rendered it very unreliable in practice, however, and as a rule it was better to use the salicylate of eserine than the solid extract of calabar bean. Chloral, while not so good a remedy or so perfect an antagonist to tetanine, was a better drug and practically of greater service. If calabar bean was used, chloral would be needed to supplement its action as the disease approached its climax; while if chloral was employed the bromides would serve in the same relation. In regard to dosage, he thought we should start with the maximum quantity, and be governed as to its subsequent increase by the effect observed upon the muscles. There was, in fact, no such thing as a perfectly safe method of treating the disease successfully. Verneuil advised doses of not less than 3j of chloral. He considered it necessary to keep the patient in a kind of continuous coma for at least fifteen days, and then gradually reduce the amount of chloral daily. Twice, however, Dr. Minor said he had succeeded in carrying cases to recovery with much smaller doses than this, and he did not think that a semi-coma was the best condition for the patient to be in. Smaller doses, he believed, were equally effective if combined with or supplemented by other remedies; and if about the end of the first week the bromides were given in addition, we should increase the action of the remedy without augmenting its danger.

The use of calabar bean required far more care and attention to detail, and he recommended that the initial dose should not be less than half a pound of the solid extract. In its administration the object was to regulate the doses in such a way

as to anticipate the condition of muscular tension, and thus prevent the recurrence of spasms. Under its use the periodicity naturally incident to the disease became more marked, because the remedy contributed to a marked remission. Two grains might be sufficient to secure this relief for two hours at a time during the first week of the disease; but 3 or 4 grains were usually required before the end of the second week, and the increasing violence of the disease would bring these doses closer together. As the crisis approached, the patient was in great danger from both the disease and the remedy, as both were cumulative in their toxic action; and at this stage both these dangers would be materially lessened by bringing chloral into use and rapidly diminishing the amount of calabar bean.

During the period of increase of the disease, no matter what remedy was employed, he believed it was necessary to increase the dose in proportion to the work it had to do, and that as the crisis came on we had to choose between the danger of an excessive dose of our remedy and an excessive dose of tetanine. The first was to be preferred, however, because if toxic symptoms appeared we might antidote them, with the probability that the disease had spent its force at this point. To pass the crisis successfully signified recovery.

Having referred to the toxic symptoms of calabar bean, and their treatment by atropia and morphia, Dr. Minor said in conclusion that to use our remedies timidly was to permit the disease to kill the patient; to use them recklessly was to perform that office ourselves. The responsibilities assumed by the physician in the treatment of traumatic tetanus were precisely the same as those belonging to the surgeon who undertook a difficult and dangerous capital operation. As to the general management of these cases, rest and nourishment were so important in their relation to the successful issue of treatment that, no matter how careful and thorough the therapeutic methods might be, they would certainly fail unless the strength of the patient was properly supported and his nervous system protected against undue excitement.

On the same evening Dr. E. D. Fisher read a paper on "Cerebral Syphilis," which was mainly devoted to the pathological condition of the blood-vessels and the clinical manifestations arising therefrom. In the course of it he exhibited a drawing of Rumpf's representing syphilitic arteritis, in which the narrowing of the lumen was very clearly delineated, and which corresponded very closely to a microscopical section of the basilar artery in a case of Dr. Fisher's.

Two new hospitals have recently been opened here with public exercises. The first, St. Joseph's, a Roman Catholic institution for incurables, is located in the upper part of the city on the East Side, and the second, the Montefiore Home for Chronic Invalids, erected by the Hebrews in memory of Sir Moses Montefiore, is up town on the West Side. At the dedication of the latter, which is a very large and handsome building beautifully situated near the Hudson River, the principal address was made by the Hon. Carl Schurz, and instrumental and vocal music was furnished by the inmates of the neighboring Hebrew Orphan Asylum.

A fine new hospital, the Arnot-Ogden memorial, has also been inaugurated at Elmira. On this occasion a letter was read from Mrs. Arnot-Ogden, who erected the building, formally transferring the institution to the board of trustees; and Dr. Wm. C. Wey accepted the trust on behalf of the board. The cost to Mrs. Ogden was $75,000, and in addition the hospital has been endowed to the extent of $50,000 by other members of the Arnot family. The consulting physicians will be Drs. Wm. C. Wey, T. L. Squire and C. W. M. Brown, and the attending physicians Drs. Henry Flood, H. De V. Pratt, Jr., C. L. Squire, and H. D. Wey.

The Board of Estimate and Apportionment have decided to increase the appropriation from the city for the maintenance and development of the farm for the insane on Long Island which was started in 1887, and has thus far proved a very successful experiment. It is designed to receive the overflow from the crowded asylums on Ward's and Blackwell's Islands, and the property embraces a thousand acres of land, which will all eventually be under cultivation by the patients. At present there are accommodations in the model buildings which have been erected for 300, who are divided up into separate groups or colonies of 100, and more colonies will be added from time to time as circumstances admit.

At the last meeting of the Section on Obstetrics and Gynecology of the Academy of Medicine, Dr. James P. Tuttle read the report of an apparently unique case; it being one of extra-uterine pregnancy in which the fœtus was delivered intact per rectum. It was of four months, and was exhibited to the Section. The mother died of hæmorrhage and exhaustion. P. B. P.

Medical gentlemen writing to the Editor of THE JOURNAL will please conform to the rule requiring MS. to be written on one side of the paper, to take pains to write the names of persons and places legibly, and to send their own names as a guarantee of good faith.

A Case of Abnormal Sexual Development in a Male.

An article on "Teratology" in THE JOURNAL of October 20, by Dr. Joseph Jones, of Lousiana, describes the case of John H. Allen, whose sexual organs were so abnormally developed as to make it uncertain whether testicles were present at all. Some of the peculiarities there mentioned are present in the following case, and taken together the two are interesting.

The case is that of a Scandinavian, who, in the

early part of 1887, attempted to enlist in the U. S. Navy as a seaman. When he undressed for the physical examination, which the writer conducted, the following facts were noted: He was apparently 24 years old, 5 feet 8 inches in height, weighed about 160 pounds, with a chest measurement of about 37 inches, and was of blonde type and in apparent perfect health. Though he possessed considerable strength, his limbs were not muscular in appearance but were excessively feminine in shape, and his hips were broader than his chest. His skin was fair and devoid of hair, except a small amount on the pubis, and there was no appearance whatever of beard. His hands were large and coarse from his occupation, that of a sailor, which he had then followed for several years. The accumulation of fat on the chest, gave the appearance of virgin mammæ, though the nipples were very small and surrounded by a very small dark areola. The voice was pleasant and though not what might be termed feminine, it was not what a man of his vigor would naturally possess. He seemed retiring in disposition though not bashful, and seemed possessed of but little energy. The penis was well-formed, about 1½ inches long, and ⅜ inch in diameter, and the testicles were not quite as large as average almonds. The size of the erected penis is not known, but he said he had had sexual relations with women a few times in his life. Viewed from the rear one would have supposed him to be a female so perfectly feminine was his entire figure.

Whenever there is an arrest of development of the sexual organs, the person always seems to have characteristics of the opposite sex, in other parts of the body, in direct ratio to the amount of impairment of the sexual apparatus. This case in which the impairment is not nearly so marked as in the one before mentioned, shows this fact, and it may be possible to find cases forming a continuous series from such as this case with but little impairment, to those rare cases in which the characteristics of each sex are equally prominent and the sexual organs so abnormally developed as to completely hide the sex, or even to true hermaphrodism. The abnormality is not merely an arrest of the development of the sexual organs, for the above cases have many female characteristics. It must start in the embryo when the differentiation of sex begins; the great majority take the course either to become perfect males or females, but a certain number take some intermediate course developing into one sex but obtaining more or less of the characteristics of the opposite sex, and a few take the middle course, becoming true hermaphrodites with the characteristics of each sex decidedly marked. Cases have been recorded of females who have thus developed many of the male qualities, and it would be interesting to know whether the number is not really larger and whether those masculine women who seem so prone to seek work in positions which men should occupy, and so repugnant to remaining at the fireside, do not really belong to this class who have not attained perfect female development, but owe their peculiarities to the false start taken by the embryo at the eighth week of intrauterine life.

CHAS. E. WOODRUFF,
Asst-Surg. U. S. A.

Fort Mackinac, Mich., Dec. 26, 1888.

The Medical College of Virginia.

[The recent Editor of THE JOURNAL has not now, and never has had the slightest disposition to do injustice to the Medical College of Virginia. All that he has permitted to be said editorally has been founded on the published statistics of the State Board of Examiners and the published statements of what took place before the Legislature or its Committees. Whether 8 rejections out of 57 is 12¼ or 14 per cent., or whether 8 rejections out of 57 is a better showing than 1 rejection out of 33, any of our readers can figure for themselves. Hence we cheerfully close the subject by giving the following letter from the Faculty, N. S. D.]

Mr. Editor:—In the number of THE JOURNAL for December 15, 1888, in the editorial on the "Medical College of Virginia," is a statement referring to Dr. Geo. Ben. Johnston and myself, namely, that "the action of the students was substantially, though unofficially, endorsed by the members of the Faculty (except Drs. John Upshur and Geo. Ben. Johnston)." The night preceding the meeting of the Legislative Committee, at a formal meeting of the Faculty, the Dean was instructed to appear before this Committe and *reaffirm* the position the Faculty had *always* taken in favor of an Examining Board and *in favor* of the *examination* of the *graduates* of the Medical College of Virginia.

Dr. Cullen was forestalled by a member of the Faculty, earlier in attendance and openly in sympathy with the students, and who, in the face of the action of his colleagues the previous night, and unauthorized by them, by the position he assumed before the Committee, placed the College in an equivocal position. Dr. Cullen, before having an opportunity to carry out the instructions of the Faculty, was called away, and though I was not present, I am informed by Dr. Cullen that the statement made by Dr. Johnston to the Committee, enunciating the position your editorial says we occupied, was made at his request, and defined the position not only of Dr. Johnston and myself, but of the Faculty. The minutes of the Faculty sustain the consistency of the Faculty on this question. Dr. Cullen's letter emphatically states, that when applied to by the students for aid, it was positively refused.

The point made in the percentage of failures

before the Board, was not so much a matter of figures, as that the showing for the graduates of the Medical College of Virginia was far better than for any other school. The accurate percentage of rejections was 12¼—and the proportion for the other schools 25 to 33 per cent. The table published failed to state that *last spring the Board licensed three young men as competent to practice* medicine, who had been *rejected by the Faculty of the College*. We are not afraid to point to the ranks of the Army, Navy, and Marine Medical Service, for numbers of our Alumni, who have given satisfactory proof to the unprejudiced, that the *work done* by the *Medical College of Virginia is not bad*.

If Dr. Cullen misunderstood the charges made by THE JOURNAL, I assert that I have read them carefully and do understand them, and I emphatically deny every statement, except so far as the students are referred to, supported and endorsed by *one* member of the Faculty in his individual capacity, and I challenge the proofs that will convince an unpredjudiced profession. You have been misinformed Mr. Editor, we only desire that you should do us justice, and certainly the organ of the American Medical Association has a higher mission, than upon such flimsy evidence, to pursue a medical school, with a stainless record of half a century, in the spirit manifested by the recent articles which have appeared in its columns.

The weal of the profession and the admission to its ranks of men thoroughly prepared, is as earnestly desired by the Faculty of the Medical College of Virginia as any other men in the profession, and we stand ready to-day to sustain the Board in the prerequisite of a *diploma*, *English examination*, and lengthened term of study. Respectfully, J. N. UPSHUR, M.D.,
Prof. Mat. Medica, etc., and Secretary of the Faculty, Medical College of Virginia.

206 E. Grace St., Richmond, Va., Dec. 21, 1888.

Infanticide.

Dear Sir:—The members of the medical profession must have felt embarrassed and humiliated at the exposure of abortionists by the *Chicago Times*. We heartily endorse the remarks of the Editor of THE JOURNAL on that subject. The profession cannot be consistent with the sentiments of this editorial and permit one of these men, or any known infanticidist, to remain within any medical society recognized by the American Medical Association. Nor should any member of the profession recognize or consult with one of them.

Permit your correspondent to say that our periodical literature has said but little, much too little, on this subject, to impress their readers with the enormity of this crime. We regret to express any opinion that will do injustice to any journal, but the truth of our convictions is, that some articles have been published by contributors to medical journals, that have come to my reading, that were not up to the standard of the opinion expressed by the Editor of THE JOURNAL. Correspondence has been published giving "The Best Mode of Producing Abortion," and one that I can recall in which the profession at large was asked to give a safe plan for this process. The public mind does not comprehend the great danger there is in producing this wrong act, nor is popular sentiment far enough advanced to comprehend the fact that it is murder to produce it. Every physician of much experience has been consulted on the propriety and even the necessity of doing this thing. Both fathers and mothers have been known to go to their physician with an argument to sustain their position, like the following: "Doctor, my wife is too weak to bear a family;" and another confronts you with the plea that he is poor and not able to raise a large family, that he has enough and as many children as he can raise, that it would be better and nearer right to prevent the offspring from coming into the world alive than to let it be born to suffer and cause others to suffer.

This error and the long list of wrong opinions on this subject, can only be corrected by medical gentlemen, in their professional intercourse with their patrons. Educate the people to know the wrong and the crime, as well as the danger attending abortion, and but few applications will be made to the abortionist, and there will be no demand for his wicked service.

J. W. HERVEY, M.D.

Indianapolis, Jan. 3, 1889.

Medical Jurisprudence.

Dear Sir:—The following case will probably interest your readers: One who holds himself out as a healer of diseases must, no matter what particular school or system he practices, be held to the duty of reasonable skill in the light of the present state of medical science. So held in a case of alleged clairvoyance. Nelson *vs.* Harrington, S. Ct. of Wisconsin, Nov. 8, 1888; 40 *Northwestern Reporter*, p. 228.

Respectfully, M. D. EWELL.

Union College of Law, law department of the Northwestern University, Chicago, Jan. 3, 1889.

PERSONAL.—Dr. E. A. Neeley, of Memphis, has retired from the editorial staff of that sterling journal, the *Memphis Medical Monthly*.

THE CODE OF ETHICS.—At the recent meeting of the Tri-State Medical Association, our Code was sustained by a unanimous vote.

BOOK NOTICES.

THE WATERS OF PLOMBIÈRES (Vosges). By DR. BOTTENTUIT, Medecin aux Eau de Plombières, Member de la Société Clinique de Paris, Chevalier de la legion d'honneur. London: J. & A. Churchill.

This work is divided in three parts, the most important is certainly that in which the description of the sources of Plombières, their analysis and their temperature is given. The description of the physical and chemical properties of the waters, some of which are very hot, and some belong to the class of the indifferent waters, such as Burton, Wildbad or Ieplitz.

A chapter is devoted to the study of the baths. Their action depends on their duration, their temperature, and on the douches, which may be applied in different manners, and produce various effects according to their mode of application, on the etuves and massages. Their use will be found very successful in many cases; their action requires careful watching.

The chapter of the indications and contra-indications of the waters of Plombières is most important to read. M. Bottentuit recapitulates in a few pages the notions which enable the physician to judge in which cases the waters of Plombières may be valuable to the patients. He insists upon the sedative and calming action of the waters of Plombières, and on the benefit derived from their use, in the cases of nervous erethisma and in affections where painful form prevails. The waters can be used, however, not merely so as to obtain a sedative action, but so as to ensure at the same time a derivative, a tonic or a stimulating one. It is the carefully combined use of these different methods which produces the most satisfactory results.

M. Bottentuit indicates the action of the waters of Plombières in the diseases of the intestinal tube (flatulent dyspepsia, stomachal vertigo, gastralgia, diseases of the intestines, chronic diarrhœa) in the troubles of the womb (metritis, amenorrhœa, dysmenorrhœa, sterility). At last, in gout and rheumatism, we may say, that since the construction of the "Nouveaux Thermes" Plombières possesses an establishment fitted with the best appliances, to be found anywhere.

Patients who cannot bear the douches or the etuves at other stations can, thanks to a judicious use of the baths, support them, and will reap great advantage from them. In such cases the douches and baths are given simultaneously, and thus the sedative effect of the bath diminishes the exciting action of the douche, without destroying its stimulating qualities.

Rheumatism, as is well-known, often attacks the viscera. Its commonest manifestations are those of gastralgia and enteralgia; often it assumes other forms, less frequent perhaps, but more difficult to trace.

In all such cases, the waters of Plombières have a happy effect, but more than that, they combat, not only the effects of the rheumatic diathesis, but the diathesis itself, which is the origin of all these troubles. The reader will be deeply interested by the account of the origin of this little town, by the changes and catastrophes undergone by Plombières, from the time the Romans settled there, to the annexion of Lorraine to France, and by the numerous works carried out during these last twenty years.

Dr. Bottentuit, in his handy little guide, gives ample information about the town of Plombières and the adjacent country, to which many pleasant excursions may be made. There is a Casino, and there is a fair amount of amusement and recreation to be had. The book is illustrated by many views of Plombières itself and of its vicinity. The Vosges country is well worth exploring as an after-cure to the course at Plombières.

P. B.

WASHINGTON'S RULES OF CIVILITY AND DECENT BEHAVIOR IN COMPANY AND CONVERSATION. A paper found among the early writings of George Washington. Copied from the original with literal exactness, and edited with notes by J. M. TONER, M.D. Washington, D. C.: W. H. Morrison. Price, 50 cents.

Among the entertaining *brochures* of the year just closed, is Dr. Toner's edition of "Washington's Rules of Civility." Dr. Toner says: "The unceasing desire of the public to learn more and more of the life and character of General Washington, induces me to publish entire, and for the first time, with literal exactness, his 'Rules of Civility and Decent Behavior in Company and Conversation.'

They were written by him at about the age of thirteen, and with the exception of some school exercises, are the earliest of his productions, in the order of time, which have been preserved. It is proper, too, that their publication should precede that of his Diaries and Journals, taken by Dr. Toner from the original MS. and arranged in chronological order with notes, which are now nearly ready for the press.

The first of the series Washington himself entitles "A Journal of my Journey Over the Mountains, begun 11th March, 1747–8. It will be seen from this date that he was but sixteen years and one month old."

Dr. Toner's patient researches into the musty records of the past are always productive of pleasure to those who read an account of them, and in this little volume he has given a glimpse of the

Father of his Country from a new and different standpoint.

The notes by Dr. Toner have a historical value apart from their general interest.

MISCELLANY.

ANTI-RABIC INOCULATION.—In recent numbers of the *Journal d'Hygiene*, October 18 and 25, 1888, Dr. Prosper de Pietra Santa discusses the present state of the question of anti-rabic inoculation. He tells us in a letter to Dr. La Torre that he has gone through the literature of the subject since 1879, and with impartiality, but he has been forced by the evidence to make part of *the crowd of obscure blasphemers*, and he has consoled himself with the thought, "*Amicus* Plato, *amicus* Socrates, *majis amica veritas*." From the arguments drawn from patriotism on the one hand, and the glorification of French science on the other, he believed with Pasteur that *la patrie de la science embrasse l'humanite tout entiere*. In giving the views of von Frish, Jules Guerin, and Peter, he did not insist on them so much as on those of H. Bouley, B. W. Richardson, and Bouchard, who, whilst professing a great regard for the illustrious chemist, yet have been compelled by the facts to give the experiments their true interpretation. Dr. Richardson (London) wrote: "*The empirical method* of Pasteur, with only a trace of genius, is wanting in scientific control." Bouchard, at the Congress at Nancy, spoke with good sense, logic and wisdom, on the method. "We cannot conceal that there still exist doubts on the mode of action of the vaccine of rabies. This inoculation does not present any analogy with other virus-vaccines, as for chicken- and small-pox. In these we have to deal with microbes known, cultivated, and rendered vaccines by laboratory manipulations. They have the same vital quality even in the least quantity. They produce a malady which confers immunity from the first. With the method of Pasteur there is nothing similar—*no attenuation of virus, no known microbe, no malady*. We are, in fact, *in empiricism*." The opinions of Bouley are quoted, favorable to many parts of Pasteur's work, but Bouley proposed a number of tests, which have not been carried out, so far as Dr. De Santa can learn, or if so, they have not escaped the doors of the Pasteur laboratory. These questions should be answered, as they were so framed as to throw light on many important points in the controversy. They have been shelved on such pleas as want of leisure. Colin of Alfort's proposals appear to have met with the same fate, though the means of the Institute have been ample for their solution. Dr. De Santa passes from opinions to figures. He tells us that the mean mortality from rabies has been questioned. It is not known accurately. Brouardel adopted the figure of thirty per annum, a figure previously adopted by Tardieu. But when the Institute of Pasteur revealed *hundreds* of cases per annum, the figure *thirty* was necessarily said to be too low. Brouardel subsequently said: "They only knew of less than half the deaths." One factor in the problem being wanting, it was illogical to state that the deaths in France had diminished. They had returns for 1887 of the Department of the Seine, collected by Dujardin-Beaumetz, of 350 bitten persons; 306 followed the treatment, with two deaths; forty-four did not follow it, with seven deaths. At first sight these figures were convincing, but in the 306 no account is taken of the treatment received before application at the laboratory, or of the proportion who escape injury, fixed by M. Leblanc at one in six, by the London Commissioners at one in five. In place of M. Grancher (March, 1886) saying, "Out of 350 persons we have had 350 *successes*," it would have been more just to delete from that proportion (one in six) who would have escaped without the anti-rabic treatment. The figures worked by Dr. De Santa stand as follows: For the mortality of seven in forty-four the formula is:

$$7 : 44 :: 1 : x = \frac{44 \times 1}{7} = 6.28.$$

This gives a mortality of 6.28. Taking some of Pasteur's large statistics, he reduces them to another formula. In July, 1887, M. Pasteur had treated 3,339 persons—2,728 bitten by rabid (?) animals, 611 by suspected animals. Out of this number there had been thirty-eight deaths, in the proportion of 1.13 per 100, taking all the deaths. Deducting the proportion of one in six, who would have escaped in all probability, we have the formula:

$$100 : 1.13 :: \frac{100}{5} : x = 20.60.$$

The figure 20.60 per cent. really represents the mortality.

These statistics, which Dr. De Santa gives, show how figures may be manipulated. He continues his letter by referring to the opinions of Vulpian and Charcot. Vulpian said at the Academy: "Rabies, that terrible malady, has at last found its remedy." Charcot said: "M. Pasteur can walk with head on high, and still pursue the accomplishment of his glorious task, without being turned aside a single instant by the clamors of contradiction or the insidious murmurs of ———." Dr. De Santa gave the reverse of the medal in the criticisms of MM. J. Guerin, Fauvel, and Peter. M. Peter stated that since the discovery of the remedy there have been more cases of rabies, that Pasteur was not the successor of Jenner, and that the method was to be condemned: 1. On scientific grounds, as it was a strange abuse of language to give the name of vaccination to such inoculations. 2. That the system was *empirical*, accentuated by contradictions—contradictions shown by the fact that a microbe was assumed which did not exist, an empiricism, by the cultivation not of the microbe but of rabid spinal cords, and in making them pass from one living organism into another living organism—an empiricism still, when he passed in his inoculations from the organism of the rabbit to that of the dog—empiricism more audacious still when he passed from his experiments on the organism of the dog, before a bite, to experiments on the organism of man after a bite, from an enraged animal.

M. Pasteur cannot complain of criticism when he himself had the audacity to say of M. Peter, one of the first clinicians in France, that he was a person clinically and experimentally incompetent to judge. This impatience of criticism is very remarkable in M. Pasteur's career. All who accept M. Pasteur's views are, of course, wholly competent, even though they have the most profound ignorance of the literature of rabies. Dr. de Santa finishes his report by alluding to the report of the English commission, which did not support the formation of a rabic institution in England, but demanded the application of rigorous police measures.

M. de Santa calls to mind M. Pasteur's felicitation of the action of the Prefect of Police of Paris in his crusade against wandering dogs. He says on this point: "It is singular to see the destruction *per fas et nefas* of the canine race praised by the *savant* who has discovered the means for curing rabies." M. de Santa points out another disappointment resulting from a reply of M. Pasteur to furnish the indications, etc., on the first symptoms of rabies in dogs and cats. M. Pasteur replied: "It was not possible to define, in an absolute manner, the characteristic symptoms of rabies, as even experts (veterinarians) might sometimes make an erroneous diagnosis." The reply is a dangerous one, because it can be applied to the diagnosis of the condition of the dogs which furnished M. Pasteur himself so many patients. M. Pasteur has, in his time, not been unsparing in his criticisms of theories with which he could not agree, and he should be the last to appeal *ad misericordiam*. He is amply rewarded by

the manner in which the Institute has been supported by the Emperor of Russia, the Sultan, and the Republic of France. The brilliant ceremony which took place at the opening of the new Institute in the Rue Dutau should compensate him for any criticism he has been subjected to. The ceremony was undoubtedly an imposing one, even though wanting in the support of the *savants* of Germany, Austria, Italy, Belgium, etc. The objects of the Institute, the study of virulent maladies are admirable. We cannot overlook the too great prominence given to rabic inoculation, so much so that Dr. Henri Huchard, the famous French therapeutist, has called the new building the "Palace of Rabies."

The address of M. Grancher at the opening of the Palace of Rabies contains a repetition of the fallacy that the mortality is 1½ per cent., which assumes that all who are bitten are in danger of contracting hydrophobia. The mortality in France remains unaffected. The mean annual of thirty deaths, established by statistics from 1850 to 1885, is still kept up. The following table, taken from the *Journal de Medecine de Paris*, November 20, gives the number of deaths after the Pasteur treatment during the year 1888:

	NOMS.	Animal el date de la morsure.	Date du traitement.	Date de la mort.
1	N., enfant de 4 ans .	Chien 6 déc. '87	12 décembre '87	22 janv. 1888
2	Sidi ben Israel . . .	Chien	Janvier 1888.	18 mars.
3	N., femme de 52 ans.	— 23 janv. .	29 janvier . . .	17 février.
4	Marinot	— 15 févr . .	15 février . . .	1 avril.
5	S., âgé de 54 ans. . .	— 9 nov . .	11 novem. 1887.	3 avril.
6	Cotte, 28 ans.	—	6 mars 1888 . .	12 avril.
7	N., enfant de 6 ans .	— avril . . .	5 avril	2 mai.
8	Avray, 11 ans. . . .	— 12 avril .	17 avril	29 mai.
9	Olin.	— 23 avril .	26 avril	17 juin.
10	Poulet, 29 ans. . . .	— 6 déc. '87	8 décembre '87	12 juillet '88.
11	Bertin, 18 mois . . .	— 15 mai . .	17 mai	20 juin.
12	Villemain, 31 mois .	— 9 mai . .	14 mai	23 juin.
13	Labeaume, 37 ans . .	Chat 29 mai . .	30 mai	6 juillet.
14	N., 28 ans	Chien 10 déc.'87	12 décembre '87	15 juillet '88.
15	Ducos, 28 ans	Chat 16 juin . .	20 juin	18 juillet.
16	Mesnil, 44 ans. . . .	Chat 25 mars .	26 mars	20 juillet.
17	Sarazin, 44 ans . . .	Chien 1 juillet.	4 juillet	4 août.
18	Guers, 27 ans	— 13 juillet.	16 juillet	8 août.
19	N. (cité par Dr. Levraud)	— 15 juillet.	16 juillet	30 août.
20	Sinardet, 26 ans . . .	— 26 avr. '86	3 mai 1886 . .	28 juillet '88.
21	Cousinier	— 12 sept. 88	12 septemb. '88	8 oct. 1888.

These are the deaths for nine months. If we add to this the mortality of persons who did not seek M. Pasteur's aid, the figure thirty, the mean mortality, would be reached.—*The Provincial Med. Journal*, Dec. 1, 1888.

QUARANTINE CONFERENCE CALLED.—The Legislature of Alabama adopted at its recent session a joint resolution calling a conference on quarantine regulations to meet in Montgomery March 5. The Governor has forwarded letters to the Goverors of Georgia, Texas, Louisiana, Mississippi, Florida, South Carolina, North Carolina, Tennessee, Kentucky and Illinois, requesting them to appoint delegates to the conference.

PAMPHLETS RECEIVED.

Marcy, Henry O., M.D., Boston, Mass. *The Climate of the Southern Appalachians.* Reprint from Tran. Ninth Int. Med. Cong. 1888.

Ibid. The Histology and Surgical Treament of Uterine Myoma Reprint from Trans. Ninth Int. Med. Cong. 1888.

Oliver, Charles A., M.D., of Philadelphia. *The Eye of the Adult Imbecile.* Reprint from Trans. Am. Ophthalmological Society. 1887.

Blanc, Henry W., M.D., of New Orleans. *Leprosy in New Orleans.* p. 65. No date.

Theobald, Samuel, M.D. *The Influence which the Discovery of Cocaine has Exerted upon Ophthalmic Surgery.* Reprint from Trans. Med. and Chirurg. Faculty of Maryland. 1888.

Ibid. Is Astigmatism a Factor in the Causation of Glaucoma? Reprint from Am. Journal of Ophthalmology, Oct., 1888.

Freire, Domingos, M.D. *Réfutation des recherches sur la Fièvre Jaune faites par M. P. Gibier, à la Havane.* Rio-Janeiro. 1888.

LETTERS RECEIVED.

J. M. Toner, M.D., Washington; W. A. Townsend Pub. Co., New York; Edward F. Wells, M.D., Shelbyville, Ind.; Henry T. Byford, M.D., City; J. J. McAchran, M.D., Salt Lake City, Utah; J. H. Smith, M.D., Dallas, Tex.; Commercial Advertiser, New York; Horlick's Food Co., Racine, Wis.; O. J. Fullerton, M.D., Waterloo, Ia.; Carl H. von Ruck, M.D., Asheville, N.C.; J. H. Kellogg, M.D., Battle Creek, Mich.; Trübner & Co., London, Eng.; Clark Cook, M.D., Fowler, Ind.; S. S. Adams, M.D., Washington, D.C.; W. Byford Ryan, M.D., Willow Branch, Ind.; Joseph Eastman, M.D., Indianapolis, Ind.; Drs. Henry A. Martin & Son, Roxbury, Mass.; Wm. B. Atkinson, M.D., Philadelphia, Pa.; E. M. Moore, M.D., Rochester, N. Y.; Leartus Connor, M.D., Detroit, Mich.; L. S. McMurtry, M.D., Danville, Ky.; Samuel N. Nelson, M.D., Boston, Mass.; Le Dr. Bottentuit, Paris, France; Frederick S. Dennis, M.D., New York; John Shrady, M.D., New York; Thos. F. Goode, Buffalo Lithia Springs, Va.; Geo. W. Barr, M.D., Titusville, Pa.; E. Steiger & Co., New York; P. O. Hooper, M.D., Little Rock, Ark.; G. F. Hesler, Tocsin, Ind.; Sharp & Dohme, Baltimore, Md.; Upjohn Pill & Granule Co., Kalamazoo, Mich.; R. W. Gardner, New York; Samuel Wright, Columbia, Pa.; W. R. Allison, M.D., Good Hope, Ill.; J. E. W. Smith, M.D., Waycross, Ga.; Richard H. Day, M.D., Baton Rouge, La.; Alonzo Garcelon, M.D., Lewiston, Me.; J. B. Andrews, M.D., Buffalo, N. Y.; P. B. Porter, M.D., New York; W. Rommelaer, M.D., Bruxelles; E. Cutter, M.D., New York; L. G. Roberts, D.D.S., Eureka Springs, Ark.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 29, 1888, to January 4, 1889.

By direction of the acting Secretary of War, Capt. Fred. C. Ainsworth, Asst. Surgeon, will proceed to New York City, N. Y., and Brooklyn, N. Y., on business connected with the Medical Department. Par. 20, S. O. 302, A. G. O., Washington, December 29, 1888.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending December 22, 1888.

Supervising Surgeon-General John B. Hamilton, granted leave of absence for sixty days. December 20, 1888.

Surgeon P. H. Bailhache, to inspect unserviceable property at New York Marine Hospital. December 17, 1888.

Surgeon Walter Wyman, to proceed to New York, N. Y., and transfer public property. December 15, 1888.

P. A. Surgeon H. R. Carter, granted leave of absence for fifteen days. December 10, 1888.

Asst. Surgeon G. M. Magruder, upon expiration of leave of absence, to proceed to New Orleans, La., for temporary duty. December 21, 1888.

Asst. Surgeon, J. O. Cobb, leave of absence extended ten days. December 14, 1888. To proceed to Evansville, Ind., for temporary duty. December 20, 1888.

Asst. Surgeon J. B. Stoner, when relieved, to proceed to New York, N. Y., for duty. December 13, 1888.

Asst. Surgeon H. D. Geddings, upon expiration of leave of absence, to proceed to New York, N. Y., for temporary duty. December 21, 1888.

CORRIGENDA.

In the New York letter published in the last issue of THE JOURNAL, eighteenth line from bottom of second column, page 31, read *exacerbation* for evacuation.